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Appraising Public Medical Services

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ONE of the foremost health tasks of the present day is to elevate the standards of public tax supported medical services for the needy and medically needy. Almost unnoticed, such programs have reached a size which gives them great social and fiscal importance. There are now some 5,500,000 persons on general relief and another 3,200,000 receiving old age assistance, aid to dependent children, and aid to the blind through federally aided programs. Probably at least $50,000,000 of federal, state, and local funds * were spent in 1939 for the general medical care of these needy persons—this sum being exclusive of all expenditures for hospitalization for tuberculosis and mental illness, and for public health services. Besides the relief group there is an indefinite number of medically needy who received an unknown amount of tax supported care. Indeed, in a number of localities medical expenditures for the medically needy have been found to equal or exceed those for the relief group. There is no accurate information as to the total amount of public funds expended in the country for general medical care for the needy and medically needy together. In a single New York county, however, $1,500,000 was spent for this purpose in 1939. A minimum indication of the national total is given by the 1935 Census of Hospitals which shows that $106,000,000 of the income of general hospitals, exclusive of those federally owned, was derived from tax funds.

* This is estimated by assuming that medical costs were 5 per cent of relief and assistance grants from all sources, which amounted to about $1,000,000,000 in 1939. The portion of federal funds used for medical care is relatively small, however, because of the provision of the Social Security law that federal matching can only be obtained for funds dispersed as "unrestricted" cash grants to needy individuals. Giving cash for medical costs to recipients of the three federally aided assistance programs has been attended with great difficulty in local administration and control. As a result, many communities have found it necessary to supply these persons with large amounts of supplementary medical care furnished in kind and paid for exclusively from local and state funds.

1. NEED FOR APPRAISAL

Considering the magnitude of these programs, surprisingly little is known about them. Here is a form of organized public medical care going on in thousands of localities throughout the country. What agencies are financially and administratively responsible? How is the provision of care organized? To what extent is there coördinated plan-

ning and technical direction of the program? How adequate is the care provided? What controls are there to assure that good care is provided at reasonable cost? In short, how—and how well or how poorly—is care to the indigent and medically needy now being provided?

Generally, the programs are administered by public welfare agencies; rarely do health departments participate in them. In a few states the welfare medical programs are state-wide, but in most places the responsibility of providing medical care to the indigent and medically needy is borne by the local communities with little supervision or aid from the state government. Surveys made by the American Public Welfare Association [1] and others have shown an almost infinite variety of arrangements for providing this care. In many localities several different agencies administer parts of the program, and there are often duplications and gaps. Frequently there are serious deficiencies in the care provided and loose and uneconomical administration.

In short, present public medical care programs have had a rapid but uncontrolled growth, and it is important to improve the caliber of their work, including both the administration and the quality of care provided. As Dr. Gertrude Sturges has well said: "Unless real progress is made in coördinating and improving existing governmental machinery for medical care administration, additional expenditures, however great, may not result in an adequate well rounded program for medical care." [2]

The first step in elevating the standards of public medical services is to examine and appraise those now existing. There is much experimentation going on, but the results have been of little general use because they have not seen the light of day.

Appraisal requires agreement on the aims or objectives of these programs. This should present little difficulty. The objectives obviously should be to provide adequate care to those who come within the scope of these programs and to furnish this care at the lowest cost consistent with fair remuneration to physicians, hospitals, and other agencies providing service and supplies. There are three parties —the welfare clients, the professions and agencies giving service, and the taxpayers—whose interests must be served, and the effectiveness of a program must be appraised from the point of view of each of these parties.

2. APPRAISAL OF GENERAL ORGANIZATION OF A PROGRAM

The first point to be considered in appraising a public medical care program is whether the overall organizational arrangement is conducive to effective operation.[3] Either the entire program should be administered by a single agency or there should be some device, such as an interdepartmental committee, to insure that it will be administered as a coördinated, balanced whole. The need for this is illustrated by one community studied by the authors in which physicians' care in the home and office was administered by one agency while hospitalization was administered by another. Here the agency providing physicians' care in the home and office tended to conserve its funds by sending patients into the hospital—a practice obviously leading to an increase in the cost of the program as a whole. Another instance of the need for coördination was seen in a locality where such cases are on record as one in which a health department nurse, a welfare department nurse, and a school nurse all visited a single case of measles on the same day.

There has been much discussion as to whether these programs should be administered primarily by health or by welfare agencies. At present, the ques-

tion of which of these agencies should have administrative responsibility is less important than whether there is close coöperation between the two in the planning and operation of the program. It is, however, pertinent to note that as medical care programs become increasingly occupied with provision of care to the medically needy, they depart from the strictly welfare field and tend to become principally community health programs. In a number of localities observed by the authors in New York State, the provision of care to the medically needy had become so extensive that often 30 per cent or more —in one town close to 70 per cent—of all the expenditures of the welfare agencies were for medical care, most of it for persons receiving no other form of public aid. Where so large a proportion of the activity of the welfare agency is in the field of health and for the benefit of persons who are not relief clients, it would seem that this activity might be more logically carried on by the health agency.

A second consideration under appraisal of the administrative organization is whether any device exists for obtaining the advice and coöperation of the medical profession, the hospitals, and other professions and agencies concerned with the provision of care. Obviously the coöperation and advice of these groups in both the planning and execution of the program are desirable and may best be sought through their official organizations. It is also desirable that a balance should be struck between these groups in order that the special interests of each may be held in check and proper coördination obtained. This can best be achieved if the representatives of these groups consider the problems of the program jointly through a device such as an advisory health council which includes representatives of all the interested parties. Committees concerned with the interests and problems of particular groups, such as the physicians, hospitals, dentists, nurses, pharmacists, etc., should be subcommittees of this main council.

A third main consideration in the appraisal of the overall organizational set-up is whether the program has qualified direction and administration. There are involved several different functions, each of which calls for special skills which it may not be possible to find in a single person. Obviously the program as a whole needs to be under the direction of a single individual who will be responsible for it as a whole and who will be qualified to know whether the program is operating satisfactorily, whether it is in balance, and whether the costs are reasonable, etc. Preferably such a person should be a physician, but this is not essential if he has sufficient knowledge of the medical field to enable him to direct the program in the same sense in which a lay superintendent directs a hospital.

There must also be provision for professional supervision of the quality and adequacy of each type of care—physicians' service to be supervised by a physician, dentistry by a dentist, nursing by a nurse, etc. If the person who directs the entire medical program is a physician, he may at the same time exercise professional supervision over physicians' services. When the size of the program justifies it, special supervisory physicians, dentists, and nurses can be employed on part- or full-time. Supervision may also sometimes be obtained from local health officials. Where such methods are not feasible, these supervisory functions can often be performed satisfactorily by voluntary advisory committees of the practitioners in question, since a program would have to be quite large in order to be able to afford even the part-time services of a supervisory practitioner in

each field. Indeed, the small scale of many welfare medical programs often makes it difficult for them to have the qualified administration and professional supervision which is desirable. In such instances, a possible solution of the problem is for several small jurisdictions to consolidate their welfare medical programs and operate them on a regional basis.

Of course, in appraising the professional supervision of any program, one must be careful to consider not only what devices exist, but how effective they are in practice.

Allied to the supervision of quality of service is the supervision necessary to assure that the physicians provide sufficient service if paid on a salary basis, and do not bill for excessive services if paid on a fee basis. It is clear from the surveys made by the authors that a lay person cannot successfully "control" the amount of service given by physicians, and that any attempt in this direction is bound to create friction between the administering agency and the physicians. Under free choice, fee for service plans, there apparently will usually be a small proportion of the physicians who will make more calls than are medically necessary, and any such tendencies must be controlled or the plan will surely fail. Such supervision can only be carried out by a physician employed by the public agency or by a committee of the practising physicians themselves. If the latter, it is important to know whether the funds to be used are unlimited or whether the agency appropriates a stipulated amount of money, the bills of physicians being reduced *pro rata* if in the aggregate they exceed the amount allotted. Without some such arrangement, experience seems to show that the physicians do not have sufficient incentive to review rigorously the bills for service.

Thus, in appraising a public medical care program, it is important at the beginning to learn whether the program has such an overall organization, qualified direction, and suitable professional supervision as will make for successful operation.

3. APPRAISAL OF ADEQUACY OF CARE PROVIDED

The next main questions to be faced are whether the program is actually providing adequate care to those for whom it is responsible—whether the scope of care provided is complete, the quality of service high, and the quantity sufficient.

Scope of Services—All those services should be provided which are necessary for adequate health care. In most programs, physicians' and hospital care for serious illness of an emergency character are usually provided, but the appraiser must learn whether care for minor and chronic illnesses is also furnished, what specialist services are offered, whether rehabilitation through "elective" surgery is emphasized, and what provisions are made for dentistry, home nursing, drugs, eye-glasses, appliances, special diets, etc. Not only should the range of medical services available in the community be studied but, equally important, the extent to which they are all utilized by the welfare medical program. Sometimes, indeed, it may be desirable for the agency administering the welfare program to take the initiative in introducing new types of medical service, thus helping to raise the medical standards of the whole community.

Quality of Care—It is difficult to appraise directly the quality of physicians' care provided in the home and office, because public agencies seldom require more than a mere report of the diagnosis, and private medical records are rarely available to the appraiser. The opinions of welfare patients may, to some extent, reflect the quality of serv-

ice they receive, but more valuable is knowledge as to which physicians are performing the bulk of services for welfare clients, and as to the medical qualifications of the physicians. At first sight it might seem that a free-choice plan would result in a wide distribution of the services among all the physicians of a community. In practice, however, a majority of the services are often performed by a small proportion of the physicians—a situation which makes it necessary to evaluate the qualifications of the physicians actually furnishing the care rather than those of all the physicians in the community. It is also important to learn whether any provisions exist for limiting certain types of specialist and surgical work to designated physicians of proven ability in these fields.

Where there is a salaried plan it is perhaps easier to appraise the quality of service, for one may readily judge the qualifications of the salaried physicians and the conditions under which they give service. Here it is particularly important to know whether the amount of service is commensurate with the salaries received. Such plans may easily fail, on the one hand, if the physicians give insufficient service or, on the other, are expected to crowd into the day more work than is reasonable.

As with physicians' care, so with the other services, dental and nursing care, hospitalization, etc.—in each case the quality of service must be appraised. Here again, the standards of the persons and institutions actually providing the care for the welfare group, as distinguished from all those in the community, must be considered. In the case of hospitals, for example, it must be noted whether welfare clients are hospitalized in institutions which also serve the general population, or whether they are cared for in public institutions that serve only the indigent and medically needy. The standards of individual hospitals may, of course, be judged in part from membership in the American Hospital Association, approval by the American College of Surgeons, registration with or approval for interneship by the American Medical Association, etc.

Any appraisal of the quality of care is incomplete without information regarding the continuity of the care given. Is the patient sent from one physician, clinic, or hospital to another indiscriminately, or is reasonable continuity of service assured? Is there suitable provision for follow-up on puzzling and chronic cases? In some programs, for example, clients have free choice of physicians for care in the home, but if ambulatory are instructed to go to clinics, and if hospitalized are served by the physicians on ward service. Under these circumstances, the patient may be seen by one physician at home, another in the clinic, and a third in the hospital. It is important to learn if there is any mechanism whereby exchange of medical information among these physicians can be effected. In some instances, patients are admitted or discharged from the hospital without any notification being sent either to the welfare worker in charge of the case or to the family physician. Seldom is any clear-cut responsibility for follow-up assigned to a medical social worker or a physician.

A similar problem exists with respect to coördinating the emotional, social, and economic factors of the patient's life with his illness and his treatment. Nothing is more apparent in modern medical practice than the fact that satisfactory care cannot be given without careful consideration of all these elements of a case and without proper coördination between medical and social services.

Quantity of Service—The quality of service cannot be considered properly apart from its quantity. For large

groups of persons, the annual need for medical services remains relatively stable from year to year, although for any one individual this need may vary enormously. This fact is, of course, the basis for all health insurance plans. A convenient measure of quantity of service, therefore, is the number of various services furnished in a year to a known population group divided by the total number of eligible persons, sick or well, in the group. This operation reduces the quantities of service to an annual per capita figure which allows accurate comparisons of the amount of service rendered under plans of various types in different parts of the country. Figures of the per capita volume of care must be calculated separately for general relief, old age assistance, aid to dependent children, etc., since because of their age composition, these groups will require different quantities of care. Such quantitative figures are usually difficult to obtain for various reasons. Thus, the records of services received by any particular group (*i.e.*, home relief, old age assistance, etc.) seldom are isolated so that they may be related to a known population base. Also, visits to physicians and clinics, days of care in hospitals, etc., where welfare departments do not pay for them on a per item basis, are rarely recorded with accuracy. It is obvious that no reliable estimates of quantity can be made in the absence of such data.

In a number of programs in two states (New York and Minnesota) where figures were especially compiled for purposes of the surveys made by the writers, the average annual number of home calls per relief recipient ranged from 0.06 at one extreme to 3.6 at the other. For old age assistance groups, the analogous figures ranged from 0.7 to 8.5 calls per person per year. The average number of office or clinic calls ranged from 0.2 to 3.7 for home relief recipients and from 1.0 to 5.0 for old age assistance.

It is clear that such differences indicate a great disparity in the services supplied, and suggest that in some of these programs an inadequate volume of care is being provided, or that in others excessive amounts of care are being paid for. From the rather meager experience data now available, it is as yet difficult to fix upon any precise range of figures which may be established as a norm. As more data from welfare and insurance experience becomes available, it will be possible to erect such norms, and they will be of great value in the appraisal of programs.

In comparing the per capita volume of medical care provided to an indigent population with that ordinarily purchased by self-supporting families, it must be borne in mind that the frequency of illness among relief or assistance groups is unusually high and that they will require more care than the normal population group. The extent to which this is so will, of course, vary from year to year, depending upon the relative importance of unemployment and sickness as main causes of people coming on the relief rolls.

Thus, relief and assistance recipients undoubtedly require more hospital care than normal population groups. In various programs in New York and Minnesota, the volume of general hospital care provided to general relief clients ranged from 1.4 to 3.1 days per capita annually, and the admission rates from 8 to 20 per 100. The average length of hospital stay per case ranged from 10.8 to 22.3 days. Under hospital care insurance, on the other hand, about 10 persons per 100 require hospital care in any one year, the average length of stay is slightly less than 10 days, and the average number of days of hospital care amounts to slightly less than 1 day per person per year. In time it probably will be possible also to

establish norms by which one may gauge whether an indigent group is receiving insufficient or excessive hospital care.

Similar quantitative data must obviously be obtained also for dental and nursing services, for prescribed drugs, for appliances, etc. Only with such figures in hand is it possible to know if a proper balance of services and supplies is being furnished or if certain items are disproportionately large or small in amount. Unfortunately, few welfare medical programs have seen the value of compiling data on the volume of service rendered.

4. REMUNERATION OF PHYSICIANS, DENTISTS, HOSPITALS, ETC.

Physicians, dentists, hospitals, nurses, pharmacists, etc., should be adequately remunerated for their services to the needy and medically needy. This is necessary not only out of fairness to those rendering care, but also because, in the long run, it is essential for the provision of care of good quality. Fair remuneration does not necessarily mean, however, that physicians, hospitals, and others should be remunerated at the same rates as those ordinarily charged private patients. Promptness and certainty of payment from a public agency, in contrast to the sizable losses on uncollectible bills from private patients, are justification for a lower schedule of fees. The fact that the public medical program may considerably increase the amount of paid medical service in a community may also justify a schedule of fees below the ordinary one. In the case of voluntary hospitals, the eleemosynary character of these institutions, their exemption from taxes, and the support received through gifts or contributions must be taken into account.

In appraising the adequacy of remuneration, both the rate per unit of service and the total payment afforded for the work as a whole should be taken into consideration. Thus one basis of judging the fairness of remuneration afforded, say, to physicians is to inquire what would be the gross income of all the physicians in the community if, as a group, they derived the same per capita income from the general population as they derived from those on relief. In one community surveyed, it was found that if the profession as a whole derived the same annual income per head from their private patients as they did from those on relief, every physician would have had, on the average, a gross income in excess of $11,000 per year.

From the point of view of those providing care, the conditions under which services are rendered are also of great importance. When these conditions are faulty they may be a far more serious source of dissatisfaction than a low rate of remuneration. Obviously the professional arrangements under which care is authorized, given, and paid for must be conducive to the provision of good care. The relationships between physician and patient necessary for good care should be encouraged rather than hindered by the program. Physicians must be able to obtain necessary specialist care, consultation service, hospital care, proper drugs, etc., for their patients. The reports or "paper work" required of physicians must be held to the minimum compatible with proper operation of the program.

5. ECONOMY OF OPERATION

Much can be learned about the effectiveness of a program, from the point of view of the economy with which it is conducted, from the annual expenditures for medical care per head of the eligible population. The same precautions must, of course, be observed here as in calculating the annual per capita quantity of services.

Different relief and assistance medical programs show a wide range in their per capita expenditures. Thus, in the

programs surveyed, a range of medical costs was found for old age assistance from $10.16 to $37.81 per person per year, and for general relief from $7.82 to $28.88. Part of this divergence is due to the fact that some welfare agencies pay for certain services—physicians' care in the hospital, for example—which in other programs are provided gratuitously, or that charitable clinic facilities are available in some communities but not in others. But even for the same categories of service one finds wide differences between localities—for old age assistance recipients, from $2.83 to $27.21 per capita for physicians' services in the home and office alone; from $1.36 to $14.97 for hospital care; from less than $1 to $6.65 for drugs. Such differences may reflect the fact that in some programs an inadequate quantity of service is being provided or that those supplying the service are unfairly remunerated; on the other hand, they may mean that in other communities excessive quantities of service are being provided or that too high rates are being paid per unit of care. Only by comparing costs with quantities of service can a proper judgment be made.

With respect to costs, also, it should be possible with further experience and analysis to establish norms of reasonable per capita expenditures for medical care to indigent groups, by which the expenditures of any one program may be evaluated.

The annual per capita expenditures for medical care, both in toto and for each item separately, may constitute useful tools for the evaluation of a program but, like most useful tools, they can effect harm if not properly used. Most decidedly, that program cannot be considered the best which has the lowest per capita expenditures—it is low cost in relation to the provision of adequate care and fair rates of remuneration which is the aim.

The relationship to each other of the expenditures for various items of care may also be useful in the evaluation of a program. Communities have been observed in which 85 per cent of all expenditures were for hospital care—a fact which indicates lack of balance. In another program expenditures for drugs for ambulatory and domiciliary patients exceeded the expenditures for physicians' services in the home and office—again an indication of poor balance, of poor control in prescribing, and possibly of poor and hurried physicians' care. Again, the negligible expenditures under some programs for dental care and nursing service are not only indicative of gaps in the care provided, but possibly of wastefulness in other parts of the program.

Record Keeping—Finally, an important point of appraisal is to determine whether those statistical and accounting records are being compiled which are necessary for enlightened and effective administration, for self-knowledge and self-appraisal. Thus, unless those administering a program know how much is being spent for medical care per eligible client, the distribution of this expenditure among the main items of care, the per capita volume of different types of care being provided, the per unit cost of prescriptions, eyeglasses, dentures, etc., they lack the most rudimentary information for intelligent operation of the program. It is the exceptional program at present which either compiles this essential information or knows how to use it. In addition, it is desirable to know the morbidity among the population, by age, sex, and diagnostic classification, and the volume and cost of care per case of illness by main diagnostic classifications. Indeed, with proper record keeping, these programs can yield valuable information about the incidence and duration of disease in a large section of the population.

6. THE MEDICALLY NEEDY

Provision of care to the medically needy is in reality a separate problem from that of providing care for relief groups, and appraisal requires other procedures. One reason for this is that in the case of the medically needy one does not know the population base, *i.e.*, the total number of persons eligible for care. Hence it is impossible to use such tools as the per capita volume of care, and the per capita cost of providing the care.

Appraisal of care for the medically needy requires, first of all, the determination of who should be classified in this group. By no means can it be assumed that the medically needy comprise only those otherwise self-supporting individuals who, during any given period, apply for and obtain medical care at the expense of public or private welfare agencies. In addition to these, there is the much larger group who are unable to afford the medical care they need, and who do not apply to public or private agencies for free care, but simply go without. The successful operation of any program for the medically needy must therefore be measured not only by how well it provides care to those who obtain it, but, far more important, to what extent it meets the medical needs of the entire low income group. It is certainly significant that in every community visited by the writers, it was the opinion of both welfare workers and physicians that the relief population was receiving much more nearly adequate medical care than was the low income group. Thus, the term "medically needy" appears to connote not so much a definite population as a problem.

The aim of any program for providing care to the medically needy should be to supplement the care which persons of low income now obtain so that all of them receive adequate medical care. Therefore, appraisal of programs for the medically needy is in reality a much larger and more difficult undertaking than the appraisal of programs for relief groups. Only a few of the major elements in appraising such programs can be considered here.

Perhaps the most important point to be evaluated is the standard by which economic eligibility of the individual to receive care at public expense is determined.[4] This standard must not be such as to deny care to those who cannot purchase it privately or, what is perhaps more important, who would otherwise go without. In many communities the care for the medically needy to be provided by public agencies —aside from that for tuberculosis, venereal disease, and infant and maternal health—consists almost entirely of hospital care. This is because it is usually assumed by welfare agencies that a person not actually on the general relief rolls is himself capable of procuring necessary home and office service from physicians. However, due to ignorance, unwillingness, or inability to pay, many such persons do not seek a physician in time. As a result, when the medically needy person becomes a concern of the public agency, his illness has frequently reached the stage at which hospitalization is necessary. One may reasonably inquire whether the provision of care at public expense at an earlier stage might not in some cases save the cost of hospitalization.

The principles involved in the provision of medical care to relief and low income groups are quite different from those involved in providing food, shelter, and clothing to relief clients. It may be that general relief must be given in such a way that people will be reluctant to accept it. With respect to medical care, however, a policy of making this care readily available to all individuals of low income will probably prove most desirable for the community

in the long run. From this point of view there would be an advantage in having the administration of medical care for both the medically needy and the indigent carried out by a different agency from that which provides general relief.

7. CONCLUSION

Existing public medical services for the indigent and medically needy serve large groups of the population, involve large expenditures of public funds, and are of great significance from the standpoint of general community health. Such services do not have to be conducted according to poor medical standards, but, on the contrary, offer opportunities, through proper organization, to raise the whole level of medical practice in a community. It is of the utmost importance to make these services more nearly adequate and to improve their administration. The first step to this end is to examine existing services, to bring them to the light of day. Concerning our present-day public medical services, one may say what the Webbs said almost 30 years ago concerning the English Local Health Authorities—"So little is made known about them that they are not even afforded, to any great extent, the benefit of mutual emulation."[5] Perhaps the greatest single step which could be taken to improve these local and state services would be the provision of federal aid, not only because of the financial assistance, but, even more important, because of the stimulation toward improved standards of service and toward efficiency and effectiveness which federal aid can be made to give. The provision of federal aid under the Social Security Act for public health work and for general assistance to the aged, dependent children, and blind has caused an almost incalculable expansion and improvement of these services at the state and local levels. It is likely that a similar improvement could be effected through federal aid to the states for medical care for the indigent and medically needy.

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The Public Health Engineer in Municipal Health Practice*

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DURING the middle and latter half of the 19th century, when our large cities, and especially our seaboard communities, first gave serious consideration to the establishment of their official health departments, a hazy cloud of uncertainty and ignorance hung over the head of the sanitarian. There was no noteworthy development in the scientific field of public health prior to the days of Koch and Pasteur who, with their colleagues, explored the field of bacteriology and shed new light upon the problems of epidemiology. From the early days of Greek medicine, the medical mind had associated human health with environment. The great Greek philosophers had argued with reason that there must be a common cause responsible for the devastating epidemics which had afflicted mankind throughout the ages. What other could humans have in common than the air, water, and the inanimate surroundings to which they were exposed? Thus our first health departments accepted a heritage which molded the structure of our community health services. More concern was felt for those nuisances offensive to the olfactory nerve, our sense of cleanliness, and our desire to be relieved of obnoxious conditions which touched our sensitivity to filth and dirt.

Among our heirlooms was the sanitary inspector whose appointment then as now was considered a matter of political expediency. Usually he was well versed in the art of vote getting, but knew little concerning the science of disease prevention or life promotion. Upon the premise that contagion resulted from miasmatic conditions, from unsavory odors caused by the accumulation of filth and sewage, or the gaseous emanations from foul drains and stagnant pools, health departments were manned with drain and plumbing inspectors and supervisors who ruled the town scavengers.

The lay sanitary inspector saw birth in such an environment, and greater depth and vision was not given to his work until the laboratorian gave us a glimpse of the true nature of infection and the specific relationship between filth and disease. Too frequently this inspector of the vintage of eighty years ago continues to occupy a prominent position in our current health program.

Concurrent with the advance in sanitary knowledge and more especially with our endeavor to suppress epidemics of the enteric diseases such as typhoid, cholera, and dysentery, a new expert grew up in the field of sanitary engineering. The spectacular reductions in death rates from water- and filth-

* Read at the Annual Conference of Municipal Public Health Engineers at Detroit, Mich., October 7, 1940.

borne infection are well known to all of us. The expansion of sewerage systems, the selection of safe sources of water with filtration and chlorination, the prompt, sanitary, and adequate disposal of garbage and refuse are the handiwork of the sanitary engineer. This engineer grew up from our engineering colleges and institutes of sanitary biology. His basic training was in the engineering sciences but he became concerned with the broad problems of epidemiology and their relationship to his mother profession. He has become an expert in the environmental aspects of disease prevention and has used his knowledge of the design, construction, and operation of engineering works as a means of promoting health among the masses.

Briefly then, we have witnessed the advent of a sanitary inspector with a good nose for nuisance abatement, and quite independently a sanitary engineer who is aware of the practical application of his engineering knowledge to a furtherance of health. Can these two types be amalgamated or must we start anew with another type of sanitarian with the best features of each who combines with his training, expertness and administrative tact? Salvaging is frequently a profitable occupation but seldom is the rebuilt structure as good as one which is new from its very foundation. Every modern health department, whether urban or rural, needs the services of a public health engineer. A few apt sanitary inspectors can be reshaped and enlightened regarding the health potentialities of environment control. This, surely, is the exceptional rather than the usual circumstance. It is extremely difficult to reëducate the old-line sanitary inspector in biologic concepts and etiologic factors which govern modern health conservation. There are many of the old-school sanitary inspectors, however, who can contribute to public health engineering under competent supervision, if there are assigned to such individuals routine responsibilities not commanding initiative from the technical viewpoint. It is likely that there will continue to be many with basic training in sanitary engineering who will broaden their horizon with biology, bacteriology, virology, public health administration, and health education. The future, it is hoped, will furnish an ever-increasing number of public health engineers who have been exposed in their school curricula to a well rounded education in the broad field of public health. It is this type of individual whose services are needed by every health department.

Let us examine for a moment the character of this public health engineer who biologically is a variant of the sanitary engineer rather than the lay inspector. He should have received his basic training in the engineering and biologic sciences, so that he may possess the fundamental technical knowledge required for his administrative responsibilities, and that he may instruct his personnel and correlate the activities of his bureau with the broader responsibilities of the local health department. It is desirable for all of us to have a home profession on which we may fall back for consolation and relief during the turbulent days of political strife which too frequently harass all public health workers. With some exceptions our technically trained health personnel will come from the fields of medicine, engineering, dentistry, and nursing, and under all circumstances a fundamental training in biology, chemistry, and physics fortifies the individual for his future career in public health. Furthermore, our public health engineer should expose himself to the broad aspects of public health work taught at university level so that he may become conversant with the other technical fields which border closely upon his chosen avocation.

Epidemiology, with its significant implication of the study and control of all diseases which afflict the masses, embraces in its wide-reaching field the work of the public health engineer as well as the contributions of the physician, biometrician, and laboratorian. It is essential that the engineer not only be familiar with the responsibilities of the public health physicians and other technicians, but he must possess a professional viewpoint which permits administrative determinations on procedures which affect both physician and engineer and which can be arrived at only through carefully planned training in the health sciences. Of course the physician and engineer will grow up through different routes but these must converge into an inverted Y so that the epidemiologic principles which govern all health work can be superimposed upon the point of juncture. The physician should know something of engineering; the engineer should be conversant with the principles of biology and physiology; each should develop a wholesome respect for the judgment of the other, a respect which is engendered by the breadth of professional education; each to regard the other as the expert in his particular field of specialization.

The criteria for good epidemiology include something more than tables, charts, and spot maps which depict a before-and-after picture. Successful health administration digs deep into the fundamental principles of education which activate human behavior and response in terms of life conservation. The public health engineer must not only share the assignment in the broad health department program to extend health knowledge, but he must be a leader in generating individual family and community response to support the department's work and to translate into terms of lay compliance the principles of sanitary science. The public health reflects our success in securing lay coöperation, be it expressed in terms of diphtheria, tuberculosis, or syphilis control, or in the construction of sewers, filtration plants, sanitary swimming pools, adequate plumbing, or general municipal cleanliness. The public health engineer must be possessed of a buoyant personality and ability to command the respect not only of his fellow health workers, but that of his coworkers in the other divisions of government—the building and public service departments, the water supply agency, and the city engineer's office. Respect for his judgment and professional standing will automatically create demands for consultation and joint direction and supervision of public activities which possess a health significance even though they are not administratively within the jurisdiction of the health department.

Many otherwise good health programs have been stamped with failure merely because the mechanical engineer who pumped the city's water supply or the maintenance engineer in some riverside industry could not conceive the important health aspects of broken mains and leaky cross-connections and neglected to submit his problems concurrently to the health department. The employment of a well trained, efficient, affable public health engineer will promptly bring such all-important health determinations to the health department. Architects will want advice on questions of housing, new-building construction and old-building remodelling, expressed in terms of air space, light, and heat to assure adequate ventilation, comfort, and freedom from unwanted hindrances to the development and maintenance of positive health. Mechanical engineers will seek advice in laying out plans for industrial plants, hotels, and public buildings, so as to avoid the dangerous connections between polluted and safe waters,

drains, and plumbing lines. The faithful pilgrims continue their religious rites in the polluted waterways of congested Asia, and spread cholera and dysentery far and wide, while not infrequently an ignorant plant engineer sets the stage for a similar scene in our country by tying together through leaky check valves a potable and a polluted water supply.

Food and milk inspection demand technical supervision, especially in designing and maintaining milk pasteurization plants void of mechanical imperfections, which engender false security and give the public an unwarranted sense of safety and freedom from milk-borne infection. Rodent and insect control require supervision by the public health engineer to ward off the encroachment of plague, typhus, epidemic jaundice, and malaria, and to add to the general comfort and wholesomeness of urban life. Industrial hygiene is replete with tasks for our engineer, being a speciality with a physiologic basis abounding with engineering expression.

Each transatlantic liner has its commanding officer, its administrator the captain. The second officer in control, in the absence of the captain or his authorized representative, is the engineer. In our health services, there is like need for this public health engineer, an adviser and coworker with the health officer to provide direct supervision for the sanitary services and to establish a broad correlation with all aspects of an epidemiologic service. His training must be both technical and comprehensive; he must be a diplomat and a teacher; he must be an administrative leader in the planning and operation of the health department services. Every municipal health service should employ one or more public health engineers. Their services engaged, they should be given the opportunity of self expression and of leadership, subject to the friendly counsel and guidance of the health commissioner.

The Public Health Engineer and the City Health Officer*

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ONE of the mysteries of the evolution of public health administration in the United States is the lag in sanitary engineering administration in municipalities behind that in the states. The rapid strides which state sanitary engineering practice has made since 1910 have not been paralleled by a corresponding activity within the municipality.

It is difficult to isolate the exact cause of this delayed phase of public health administration. In Baltimore City, for example, the appointment of a health officer for the Port of Baltimore was authorized by the Legislature almost 150 years ago, on May 7, 1795. From that time to this, municipal public health administration has moved rapidly forward with efficiency and with expanding organization. Even within that setting, however, engineering administration within the health department has been sadly in arrears, although some engineering personnel has been made available within recent years.

The situation in Baltimore is perhaps typical of that prevailing in many of the municipalities of the United States.

These historical deficiencies lead one to inquire whether or not sanitary engineering work within the city health department is desirable; what those activities should encompass; and what specific functions sanitary engineers could perform with advantage to the city health officer.

ENGINEERING PROBLEMS OF A PUBLIC HEALTH NATURE IN A MUNICIPALITY

It is not the author's intention to rehearse at this time the comprehensive list of engineering activities which make their impact on disease and on health. Most of these are familiar to all practitioners. It is desirable, however, to recall that, within the normal American city, virtually all of the environmental problems of the past continue to confront the administrator of the present. Once more it must be emphasized, as we have pointed out many times elsewhere, that the ghosts of environmental disease have been laid only in literature but not in fact.

One of the dramatic reminders in 1940 of the eternal vigilance necessary to control environmental diseases is the recent coöperative study initiated by the States of Wisconsin, Minnesota, Illinois, Missouri, and Iowa of malaria problems in a region relatively free from this disease for over 50 years. The appearance of Mr. Le Prince in this territory as consultant in the field of mosquito eradication is an interesting example of encircling the clock of history in the environmental control field.

This phenomenon of reversion in practice is neither mysterious nor unexpected, when it is remembered that the engineer in other fields is making over the surface of the United States, by

* Read at the Annual Conference of Municipal Public Health Engineers at Detroit, Mich., October 7, 1940.

creating structures for the impounding of water, by drainage, by relocation of rivers, and by myriads of other activities.

Other recent reminders of the problems of environmental control are in the startling typhoid fever epidemic in a state hospital in Illinois, typhus fever problems in cities in Georgia and Maryland, bubonic plague in Idaho, epidemics due to water supplies, milk and milk products, and other foods aggregating as late as 1938 over 36,000 cases.

Leslie C. Frank estimates, for example, in 1940 that "there were 1,000 or more outbreaks of disease due to faulty sanitation in 1938, resulting in hundreds of thousands of cases, and 400 or more deaths." He adds the comment that "typhus fever, with 2,300 cases and 137 deaths in 1938, undulant fever with at least 2,000 to 3,000 cases per year, and malaria with several hundred thousand cases and several thousand deaths per year, are all the result of faulty environmental sanitation."

The point need not be labored that there is much for sanitary engineers to do in the control of the environment of the highly complex municipalities of the United States and elsewhere. The regulation of factors producing malaria, yellow fever, typhus, plague, typhoid fever, and dysentery runs parallel with operations necessary for the control of schools, housing, hotels, hospitals, water supply, sewerage, and refuse disposal; with intermittent difficulty with poisoning from lead chromate in snuff and from antimony in porcelain ware. The field is broad and requires the training, the equipment and the perspective of the engineer, whether of sanitary, chemical, mechanical, or electrical origin.

If, in addition, we expand this field of activity as the author suggested in Detroit before the American Public Health Association on October 22, 1924, the practice becomes even more complex and essential. Sixteen years ago he stated:

> In all that has so far been said, the importance of environmental control for the present and the future has rested upon a narrow definition of environmental activity. I should like, for a moment, to expand upon the possibilities of the future by envisaging a physical environment delicately adjusted to the optimum physiological requirements of the individual. Heretofore, we have emphasized the control of the negative side of environment by attempting to eliminate and prevent those "accidents" of this mundane sphere to which man has been exposed, as typhoid fever, malaria, yellow fever, industrial accidents, acute infections, etc. Little or nothing has so far been contributed to the positive phase of environmental control, that is, the maintenance of a higher level of physiological efficiency at all times by the proper adjustment of the factors in environment. Obviously, our knowledge of the underlying principles of the positive effects of such adjustments of housing, ventilation and heating, upon man are exceedingly meager, but no one will question that the individual's adaptation to this world may be improved by changing the individual or by modifying his physical environment. How far this latter form of control may be extended we do not predict, but its limitations at present are in the almost complete absence of positive adjustment of environment and in the very fragmentary knowledge of the relation which the controllable physical world actually bears to physiological function. Both of these limitations time must necessarily remove, for they are limitations of inertia and ignorance.

This brief review of the technical problems of the sanitary engineer is sufficient to demonstrate the validity of the statement that a broad field of activity is at hand for the municipal public health engineer. Even a cursory familiarity, however, with the average American city and its public health organization discloses that the challenge of activity has not been met by the city health officer or his budget makers.

INTERNAL ADMINISTRATIVE RELATIONSHIPS

Assuming the functions exist and the job has been made available, what are the major activities and privileges of the public health engineer in the city health department?

Every municipality in the United States, almost without exception, has a staff of sanitary inspectors. For the most part they represent experienced, but generally untrained individuals. They have much to contribute to the advance of environmental control. The number of these runs from 2 or 3 in the small municipality to 400 or 500 in a city such as New York. They are an accepted fact in American municipal administration. The first function of the public health engineer is to utilize the experience of these men and to expand their possibilities by adequate in-service training to familiarize them with the most modern concepts of disease control and prevention, to reorient their activities for the maximum values in control and to adapt their experience to more fruitful performance.

So frequently the engineer is tempted to reorganize the entire sanitary inspection force, perhaps by wholesale dismissal. This approach is neither practical nor possible and often starts the enterprise off in the wrong direction. Slow addition of trained engineers to the staff will utilize and develop the potential values of the existing untrained staff to the maximum. It is perhaps the major function of the municipal public health engineer to adapt the existing staff of sanitary inspectors to maximum efficient performance.

Perhaps a second major function is to review, assay, and revise the sanitary ordinances and codes to assure a uniform, effective, and intelligent program for the control of the environment, the elimination of inadequate and obsolete regulations, the simplification and integration of existing and new rules, and the formulation of sound major policies. American cities are literally hidebound and hamstrung with ordinances and codes whose reasons for existence disappeared in the nineties. The prohibition against the use of fresh vegetables to prevent yellow fever still rests undisturbed in some ordinances in the United States. Now and then resurrection of the rules causes difficulty and expense.

So much of the expanding field of public health engineering requires an eye for the new, that research must supply not only the basis for control but the stimulation of new activities. The engineer accustomed to objective comparison, experiment, and observation should be a militant leader in the development of study and research undertakings. He should be in the forefront in curiosity regarding new or modified methods of prevention and control.

This does not mean that he should assist in the mere accumulation of laboratory data. Tons of laboratory reports are accumulated each year in state and municipal organizations which are for the most part useless. One of the great misfortunes of many administrative agencies is the mere collection of data which go far to the filling up of storage space, but not so far in the development of new ideas of solutions.

Every health department is the repository of a mine of statistical information of a laboratory or collateral nature. It cannot be too strongly emphasized that the engineer has a great contribution to make in the exploration of such mines. As the late Will Rogers used to say: "Collecting data is like collecting garbage. After you have it, you have to do something with it!"

EXTERNAL ADMINISTRATIVE RELATIONSHIPS

The public health engineer cannot fulfil his full function to the city health officer unless he is aware of the fact that engineering activities in a municipality cannot go forward in a vacuum. They must be related and integrated with all of the other physical and human activities in the city. The engineer, if he is to perform at all successfully, must perform "in vivo" and not "in vitro." He must be aware of

the fact that, if there is advantage in providing a healthy dwelling for man from birth to old age, " it must be done in a carefully planned city, with protected food supplies, safe working conditions, and protection against insects, rodents, bacteria and their ravages."

To do this intelligently and adequately means continual contact and coöperation with other public and private agencies of the city, such as the departments of planning, water, public works, buildings, finance, the council of social agencies, the housing authority, the technical schools, and virtually every other enterprise whose objective is the public health and social advancement of the city. This insistence upon the introduction of public health engineering perspectives into the complex of municipal enterprise in general will be difficult. One of the major obstacles to engineering practice within the health department lies in the hostility of other engineering agencies within the municipality. Virtually all of this opposition stems from the assumption that the engineering activities of a municipality should be within a department of public works. This is a faulty assumption, since the primary reason for an engineer in the health department is to bring to the department of public works and all other engineering agencies a health perspective generally not dominant in such departments. These engineering units have major concern with problems other than health, and it is not surprising that the health aspects of this work are sometimes underestimated, because of the pressure of manifold duties in specialized engineering fields.

A dramatic example of this lack of perspective and emphasis on health was in the operations of the Manteno Hospital in Illinois. The competent administrators of this agency viewed the hazards of water supply from the health standpoint as interesting but insignificant, in contrast with the current administrative problems and duties in other fields. These examples can be multiplied many times in recent history of epidemics throughout the United States. It must be emphasized that the average engineer in municipal activity is concerned with health incidental to the major problems of construction, operation, and maintenance. The engineer in the health department, however, must have health as the predominating motive in his activity. It is primary and not secondary in his day by day administrative functioning. There is no substitute for this emphasis, small in the instance of public works departments, and great in the instance of health departments. The recognition of this variation in fact and in principle does not reflect upon either of the departments. It is a natural variation which should be recognized by every city health officer. It should be recognized, furthermore, before an epidemic and not after, as is so frequently the case.

In an increasing degree the public health engineer must relate his activity to the general physical and social problems of the city. This implies on his part not only an increasing familiarity with and an interest in the underlying physical bases of his activity, but the introduction of disease and health aspects into city planning, housing, traffic control, water supply, sewerage and other municipal functions, by frequent contact with the agencies responsible for these functions.

It is no longer a fantasy of the engineer to insist upon the significance of geography, geology, and the nature of soils as contributing elements to the causation of disease. The dust storms of the Great Plains, with the consequent increases of the silica content of the dust, have brought about an increase in fibrosis of the lungs, with physical findings bordering on silicosis. In Florida, in contrast, the severe nutritional disease

of cattle, known locally as "salt sick," occurs when feeding is restricted to native forages grown on certain white and gray sands and residual muck. In those same districts, where deficient soils were responsible for a high prevalence of "salt sick" among cattle, from 52 to 96 per cent of children examined are anemic.

One of the medical officers in this area recalls that during pregnancy Negro women living in soil deficient areas are known to walk for miles to find what is known as stump dirt—the dirt found when a large tree blows over and brings up a clay subsoil—and bring back buckets of this clay which they eat to supply the developing fetus. The need of these women for iron is great.

These illustrations are intended to indicate that the public health engineer can make his greatest contribution to external relationships by expanding his own knowledge of all of the physical features of the environment which are related to disease. He, more than any individual in the city health department, may be expected to have that academic equipment and training which should lead him not only to understand the impact of physical forces upon the individual but to apply that understanding to the problems of control. To do this with the utmost effectiveness means literally the application of all of his engineering knowledge to the problems of disease and health. To him the city health officer should look for all of those forms of environmental regulation which by training, experience, and technic the medical officer of health cannot supply.

SUMMARY

The city is one of the most complex social organizations of modern times. Its survival rests upon the smooth functioning of this social organization. The health record of the city is a tribute to the efficiency of that machinery.

At the same time the risk of its collapse and disintegration is always close at hand. The city can maintain its successful position from the standpoint of health only by continuing vigilance. In this vigilance the activities of the city health department are dominant. It has been said that man treads on a thin crust of civilization. At any moment he may puncture that crust and collapse. The city health officer plays one of the most important rôles in protecting this structure. The public health engineer adds to his strength at key points.

The problems of the future are more complex still and emphasize more and more the importance of the engineer in preventing the accidents of civilization and in promoting the protections afforded by environmental control. He has an elaborate task to perform. Neither the health officer nor the engineer has taken maximum advantage of these potentialities. They are great and they await translation into actual returns.

Need for Greater State Supervision of Water Works*

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THOUGH we have made remarkable progress in water supply in the United States, particularly in the 1930–1940 decade, we have been unduly slow in applying increased knowledge to water works construction. This dereliction has resulted in the failure of many water works and the consequent waste of considerable financial and material resources.

In the past six years, at least 22 towns and cities in 9 states have abandoned water works projects after spending $70,000 on them because of insufficient supply or unsatisfactory quality brought about by incomplete preliminary investigations of local water supply resources by their officials and consulting engineers. The populations of 17 of these communities averaged less than 1,000, and of the other 5 less than 1,800.

For like reasons and in the same period, one town of less than 500 population spent $4,000 drilling a well 650′ deep only to abandon it as a failure in favor of a spring supply; another town of less than 700 population spent $3,000 on a well 630′ deep and, when no water was obtained, used a river water supply; a town of 500 drilled three wells which proved dry, and then resorted to filtration of a river supply; a town of less than 1,300 drilled 6 wells and then abandoned them after they proved dry, bought and developed an existing well and drilled another adjacent to it; another town of approximately 800 population turned from a spring development to a well; and one town of 400 turned from two wells to a spring supply.

In 1936 upon the advice of an oil geologist, a city of less than 2,000 population drilled a well 3,800′ deep hoping to obtain an artesian water supply. After spending over $96,000, and failing to get the necessary water flow, the well was abandoned as a total loss. The city officials and their adviser did not consider it necessary, before drilling a new well, to investigate thoroughly the feasibility of using an existing river supply and two nearby wells to provide the long needed improvements. In the end, the city reverted to the use of the river water.

A midwestern village of less than 500 population, seriously in need of an adequate water supply due to the low yield of existing wells, installed a new well one mile to the north of the village. During the drought years of 1930–1933, lowering of the ground water level made this supply wholly inadequate. After considerable testing, and upon the advice of the consulting engineer, a new 60′ well was dug in 1934 in a valley approximately 3½ miles north of the village, and a pump installed. A temporary steel pipe line of old 3″ boiler

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flues was laid between the valley well and the one north of the village. This pipe line deteriorated rapidly and leaked excessively. In 1939 with the advice of a consulting engineer, the village drilled 30 test holes over a 5 acre tract around the valley well. The village was advised that a dependable supply of water was available beneath the valley but that the rate at which each well could be pumped was very limited due to the relatively tight character of the water-bearing strata, which gives water slowly. As one test hole near the valley well proved promising, the village decided, in order to obtain a sufficient water supply and keep pumping costs within reason, to replace the old steel pipe with 14,500′ of 4″ class 150 cast iron pipe and install a new well with gravel wall, pumphouse and pump. When the project was completed the yield of 4 g.p.m. from the last valley well and 6 g.p.m. from the other valley well did not suffice for the village needs.

In 1938 a city of over 100,000 population considered improvements to its ground water supply on the basis of two plans, each sponsored by different consulting engineers. The first involved an expense of approximately half a million dollars for a water softening plant and the second cost approximately $4,000,000 for a ground water supply from 15 new wells and a surface supply to replace the present city ground water supply, a 17 mile supply line, a water softening and filtration plant, a pumping plant, and cast iron mains and storage tanks. The existing ground water supply obtained from three groups of city wells serviced by separate pumping stations was hard and slightly corrosive, resulting in tuberculation of the cast iron mains. Conical step-type aerators in use at the pumping stations proved less effective than experimental tray-type aerators in liberating carbon dioxide in the water.

Due to insufficient funds, the second plan was abandoned and plans for the first project were initiated. Because (a) the water consumption was increasing rapidly, (b) the average rate of diminution of all the wells of the city's supply was about 3 per cent per annum and certain wells showed a decrease of 9 per cent per annum, and (c) three new wells completed in 1937 delivered less than the anticipated quantity of water, the city in 1939 changed the project to five additional city wells, cast iron mains, pumps and elevated tanks at the same cost. Three of the new wells were located within 3 miles of the main pumping station, and their yield was lowered by pumping of the station wells which influenced ground water flow in a 6 mile radius zone. There were over 150 privately owned artesian wells within this area with a capacity of over 4 times the average quantity of water distributed through city mains. These facts indicated that by 1950 the water from the existing and new wells might not be sufficient for the city's needs. The plans for the new wells provided for conical step-type aerators instead of the more efficient tray aerators. No provision was made for softening the city water.

Impartial study of these examples discloses the following significant and important findings:

1. Officials of small communities lack adequate and reliable information regarding suitable water works.
2. Existing water works practice with respect to planning and new construction seems inadequate.
3. Preliminary quantity and quality data of new water supplies are insufficient for competent determination of proper supply.

Fortunately, remedies for these imperfect conditions have been tried by governmental agencies and proved successful. What is needed is their universal application through integrated coöperating state bodies. Briefly, a suggested program would consist of:

1. Review of a new public water works proposal by the State Planning Board to determine its need, the order of importance of the project to the community with respect to other public improvements, and the timeliness of the works according to state and national economic conditions.

2. After approval by the State Planning Board, coördinate review of the proposal by (a) the state attorney general to determine compliance with the law, (b) the state comptroller or auditor to assure the adequacy of funds for construction, and (c) the state department of health to pass upon all technical phases of the plans.

3. After approval by all the reviewing state bodies, construction only of that part of the project necessary definitely to assure a water supply sufficient in quantity and suitable in quality to satisfy the municipal needs as established by the state department of health.

4. Assured of a suitable water supply, completion of the water works project subject to (a) periodical inspection by the state department of health to determine compliance with original plans and specifications, and (b) periodical audits by state auditors to assure adequate funds.

5. Before acceptance of the water works by the community, final testing and inspection by the consulting water works engineer and the state department of health to note compliance with contracts.

The plan is predicated upon assumption by state departments of health of all technical supervision over public water works. At present the majority of states have designated their health departments as agencies to review water works plans and specifications prior to construction and to supervise their operation in the interest of public health. For effective, economic, and integrated administration, it appears desirable that authority for technical supervision of construction of public water works be delegated to the same department.

It may appear amiss to raise the point that water works should be designed by licensed consulting engineers with necessary actual water works experience; yet many water works failures can be attributed to neglect of this principle. It is still not uncommon for municipal officials to depend solely on architects, geologists, and engineers experienced in other phases of engineering than water works to plan their water works systems. It is not reasonable to expect the best results with such practice.

Second Inter-American Congress of Municipalities

A CONGRESS to bring together the urban peoples of the western world, for discussion of the rapidly increasing problems in which they have a common interest, will be held in Santiago de Chile, September 15 to 21, 1941.

The first Pan-American Congress of Municipalities assembled in Havana in November, 1938, and was organized in accordance with a resolution adopted by the 6th International Conference of American States which met in Havana in 1928. A Secretariat in Havana has been collaborating with various American countries and has published the Bulletin of the Pan-American Commission on Inter-Municipal Coöperation.

Among the Commissions for the consideration of technical municipal problems is a section on Urban Planning for the Municipality, including health, transit and safety, and other technical considerations.

Disabling Sickness Among Industrial Workers

With Particular Reference to Time Changes in Duration*

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DURING recent years several sickness experiences among industrial workers have revealed an increasing average duration of incapacitation, a discovery which is seriously engaging the attention of many who are interested in the protection and improvement of the health of the worker. Thus the Department of Health for Scotland is devoting more and more thought to the subject as is evidenced by the increasing amount of material on chronic incapacitation † that has appeared in the last three annual reports on incapacitating sickness in the insured wage earning population of Scotland. Reference is made to the reports covering 1934–1935, 1935–1936, and 1936–1937 which were published in 1936, 1937, and 1939, respectively.[11, 12, 13]

Of these reports the first devotes a short paragraph to the subject emphasizing that a large part of the whole sickness loss is contributed by long-term incapacities, the rates for these showing over a 5 year period a tendency to increase. The second report contains a "Special Study—Chronic Incapacity," stating, among other things, that of the total 19.75 million days of incapacitation for 1935–1936, 11 million days were accounted for by chronic illness. Finally the third report carries a complete section on the subject. In a review of this report the *Lancet* comments editorially as follows: "The prevalence of chronic incapacitating sickness is one of the most formidable of the problems that now confront health insurance administrators."[14]

These long-term sicknesses have contributed much to the average annual time-lost rate, and it is of interest to observe that an examination of the appropriate data given in the different annual reports reveals that the trend of this rate is upward for the insured male population of Scotland.

Because of the important implications of these findings the present paper briefly reviews the Scotch experience, and examines the morbidity experience of a sample of white male American industrial workers with particular reference to time changes in the average duration of incapacitation.

Experience Among the Insured Population of Scotland *

The most recent annual report[13] deals with the incapacitating sickness experience of about 1.8 million wage

* Read before the Industrial Hygiene Section of the American Public Health Association at the Sixty-ninth Annual Meeting in Detroit, Mich., October 8, 1940. In connection with this paper the reader is referred to item 19 in the list of references.

† *Chronic incapacitation*, that is, incapacitation accounted for by "cases current over the entire statistical year."

* In this connection the reader is referred to items 15 and 16 in the list of references.

earners for the year 1936–1937 and records 26.7 million days of sickness of which 42 per cent were accounted for by long-term illnesses. Of the 20,000 chronic cases surviving at June 30, 1937, among 1.2 million males, 4,000 had their onset in 1935; 3,000 in 1934; 2,400 in 1933; 2,000 in 1932; 2,000 in 1931; 1,000 in 1930; between 100 and 800 in each of the years 1918–1929, and less than 100 in each of the years, 1912–1917. Thirteen per cent were among males under 35 years of age; 46 per cent between 35 and 55; and 41 per cent over 55 years of age. An examination of age at onset shows, according to the report, that the number of persons incapacitated at a given date contains a much larger proportion of comparatively young persons than might have been anticipated.

With regard to cause, in males under 35 years of age, tuberculosis and "other diseases of the nervous system" (principally mental cases in institutions) account for half of the total cases; in the age group 35–55, over half of the total incidence is accounted for by diseases of the nervous system (21 per cent), tuberculosis (11 per cent), bronchitis and pneumonia (10 per cent), and rheumatism (9 per cent); and, finally, in ages over 55 years, 5 cause groups accounted for nearly two-thirds of all cases: "other diseases of the nervous system" (15 per cent), rheumatism (14 per cent), heart disease (12 per cent), nervous debilities (11 per cent), and bronchitis and pneumonia (10 per cent).

With respect to time changes in the average annual number of days of incapacity from all causes, the available data cover the 6 years, 1931–1937, and show an increase from 8.3 days per male at the beginning of the period to 14.1 days at the end. An upward trend is observable for each of the quinquennial age groups. The quinquennial rates for 1931–1932 vary from 4.3 at under 20, to 32.0 at 60 and over, while the corresponding variation for 1936–1937 is 5.5 to 49.2. The rates for the quinquennia between 35 and 60 in 1936–1937 are approximately double the corresponding rates for 1931–1932.

In an attempt to account for the unfavorable trend of chronic disability among the insured population of Scotland, McKinlay[17] refers to two factors: first, the aging of the population, and, second, the decline in mortality. The aging of the population, according to this author, when viewed in relation to the ages under consideration, offers only a small part of the explanation. With respect to the decline in mortality, he writes: "It is possible, indeed probable, that part of the increase is directly attributable to the saving or prolongation of life, death being postponed, but working capacity not necessarily restored. . . ."

PRESENT EXPERIENCE

1. Introductory

Source of data—The Occupational Morbidity and Mortality Study* makes available the data requisite for the present inquiry. These data comprise certain selections from the material transcribed from the medical records of the sick benefit organization of a railroad, and cover the years 1930 through 1934.

Regulations of the sick benefit organization — The transcribed sickness data are by no means complete because of certain regulations governing the sick benefit organization. Only those disabilities were included for which sick benefits had been paid, and these disabilities had to be longer than the waiting period of 6 days. Moreover, the introduction of a standard 7 day wait-

* A part of the National Health Survey, a survey made possible by a grant from the Works Progress Administration in 1935. Papers that have appeared thus far from the Occupational Morbidity and Mortality Study are given in the list of references; the reader is referred particularly to numbers 2 and 3.

ing period at the beginning of the analyses based on the material from the Occupational Morbidity and Mortality Study affects the present experience in that it was necessary to omit all recorded disabilities of 7 days' duration.

Furthermore, accidents of industrial origin are not included in the records, and generally the records are not inclusive of all disabling illnesses and nonindustrial injuries of the duration specified above, since the organization refuses sick benefits for disability resulting from the improper use of stimulants or narcotics, "immoral practices," voluntary self-injury, unlawful acts, and fighting.

While membership was voluntary in the organization, and none was debarred because of chronic ailments or because of employment in a particular occupation, there was specified for employees desiring membership an age limit of 45 years, as well as the passing of a physical examination.

The benefit period is 52 weeks, with half benefits continuous thereafter; the maximum is 52 weeks per year, with half benefits continuous thereafter. Successive periods of disability from the same cause are summed in computing the 52 weeks of full-rate benefits; if at work for 13 full weeks, the case is considered a new one, and the member is eligible for 52 full weeks again, otherwise half benefits are received.

Notification, certification, and verification of disability—The organization requires that a case be reported immediately, a physician's certificate of illness is necessary, and the nature of the illness is reported by the physician. Company physicians are responsible for detecting malingering.

Medical provisions — The railroad provides medical examiners, clinic treatments, and consultant and first aid work by nurses and first aid men. Provisions are made for the medical examination of trainmen and track workers every 2 years to age 40, and every year thereafter. Special examinations are made more frequently when necessary. A regular health bulletin and program are maintained.

II. Analysis of the Data

It is helpful to remember in connection with the analysis that the three rates (average duration of incapacitation, time lost, and frequency) are related and that because of this relationship any one of the rates may be obtained from the other two. Thus if A, B, and C are defined as follows,

A = average annual number of days of disability per person or time-lost rate or disability rate

B = average annual number of cases of disability per 1,000 persons or frequency rate

C = average number of days per case or average duration of incapacitation or disability

then, $A = BC/1{,}000$,
$B = 1{,}000\ A/C$, and,
$C = 1{,}000\ A/B$.

Population, cases, and days of disability—A total of 27,562 white male railroad workers constitutes the exposed population. On the basis of continuous membership in the sick benefit organization during the entire study period of 5 years, this population would have yielded 137,810 male-years of exposure. Actually there were 105,753 male-years, indicating that the average membership per male was approximately 46 instead of 60 months. There were 15,372 cases of disability that lasted 8 calendar days or longer; these cases accounted for 1,985,183 days of disability.* For all ages the average daily percentage of males disabled during the 5 years was 5.1. This percentage was 1.5 at under 25 years of

* These days of disability include the first 7 days of disability.

TABLE 1

Average Annual Number of Days of Disability per Male on Account of Sickness and Nonindustrial Injuries from Cases Lasting 8 Calendar Days or Longer, by Age Group and Year of Onset of Disability; Experience of White Male Members of the Sick Benefit Organization of a Railroad, 1930–1934, Inclusive

Year of Onset of Disability	All Ages[1]	Age in Years as of July 1, 1932					
		Under 25	25–34	35–44	45–54	55–64	65 and Over
		Number of Days of Disability per Male					
1930–1934	18.8	5.6	8.6	12.5	19.5	37.6	59.6
1930	13.9	3.4	6.9	9.4	14.8	28.2	60.2
1931	16.4	5.7	7.6	10.9	17.5	32.4	53.7
1932	20.1	6.8	9.7	14.3	21.0	36.8	65.1
1933	22.3	10.3	10.9	14.3	21.7	43.7	66.7
1934	23.1	6.2	9.6	14.4	23.7	49.6	52.2
		Number of Days of Disability					
1930–1934	1,985,183	11,506	164,080	411,888	612,037	712,317	69,794
1930	348,077	2,453	36,861	70,830	101,427	116,672	19,331
1931	369,580	2,649	32,492	76,016	114,962	128,774	13,968
1932	416,288	2,191	34,333	93,290	131,211	139,683	14,462
1933	417,442	2,337	30,554	85,303	128,687	156,755	13,000
1934	433,796	1,876	29,840	86,449	135,750	170,433	9,033
		Number of Male-years of Membership					
1930–1934	105,753	2,040	19,054	33,072	31,322	18,927	1,171
1930	24,989	730	5,324	7,569	6,860	4,138	321
1931	22,566	461	4,279	7,002	6,554	3,974	260
1932	20,676	320	3,541	6,520	6,252	3,793	222
1933	18,739	228	2,803	5,981	5,919	3,589	195
1934	18,783	301	3,107	6,000	5,737	3,433	173

[1] Includes a negligible number of persons of unknown age.

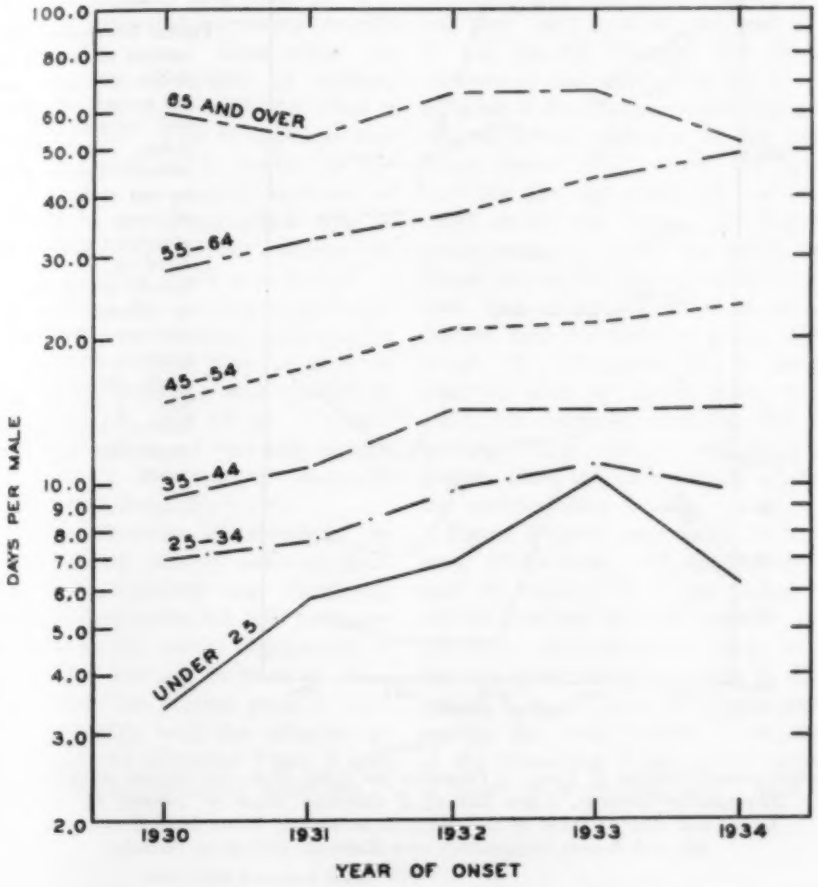
age, and increased gradually to 16.3 per cent at 65 and over.†

Average annual number of days of disability per male by age group and year of onset of disability—The pertinent rates specific for age group and year of onset of disability are shown in Table 1. It will be observed that the rates for the 5 years, 1930–1934, increase in an orderly manner from 5.6 days per male per year for ages under 25 years to 59.6 for ages 65 and over. There is a similar movement with age, though not so orderly, when the years of onset of disability are considered separately.

† These rates for the 5 years as well as those for each year may be obtained from Table 1 by dividing the appropriate average annual numbers of days of disability per male by 3.65. With regard to the time changes in the rates, Figure 1 may be conveniently used to represent them. All that is necessary is to reduce each unit of the vertical scale by dividing by 3.65, the curves themselves remaining unchanged. No account is taken of the negligible error introduced by the fact that the year 1932 contained 366 days.

The foregoing is another confirmation of what has been repeatedly found, namely, that the time-lost rate increases with age. What is perhaps of more importance for the present inquiry are the time changes in the rate, particularly the time changes specific for age group. Table 1 contains the requisite material for a consideration of these changes, and Figure 1 shows them graphically. An inspection of the table reveals that the rate for all ages increases gradually from 13.9 days per male in 1930 to 23.1 in 1934, the magnitudes of the rate and consequently their movement being remarkably similar to the experience of the age group, 45–54 years. The figure shows that the trend of the rates corresponding to each age group increased gradually with the passage of time, the trend for the age group 55–64 years showing the most rapid increase. It is also observed that the rates for each age group form discrete sets, the graph for each succeeding

FIGURE 1—Average annual number of days of disability per male on account of sickness and nonindustrial injuries from cases lasting 8 calendar days or longer, by age group and year of onset of disability; experience of white male members of the sick benefit organization of a railroad, 1930–1934, inclusive. (Vertical logarithmic scale.) The graph representing "all ages" is not shown; it follows closely the graph for ages 45–54 years.



older age group appearing in a higher position than its predecessor. The more or less erratic behavior of the rates corresponding to the youngest and oldest age groups may be ascribed to the relatively small numbers of workers comprising those age groups.

Average annual number of disabilities per 1,000 males by age group and year of onset of disability—In the preceding section it was shown that during the years, 1930–1934, each age group of the white male railroad workers under study experienced time-lost rates whose trend was upward. It is of considerable interest to know how the frequency of the cases behaved with respect to the same time period. Table 2 shows the average annual number of cases per 1,000 males by age group and year of onset of disability, and Figure 2 presents the material graphically. It will be seen that while for each age group the rates for successive years are

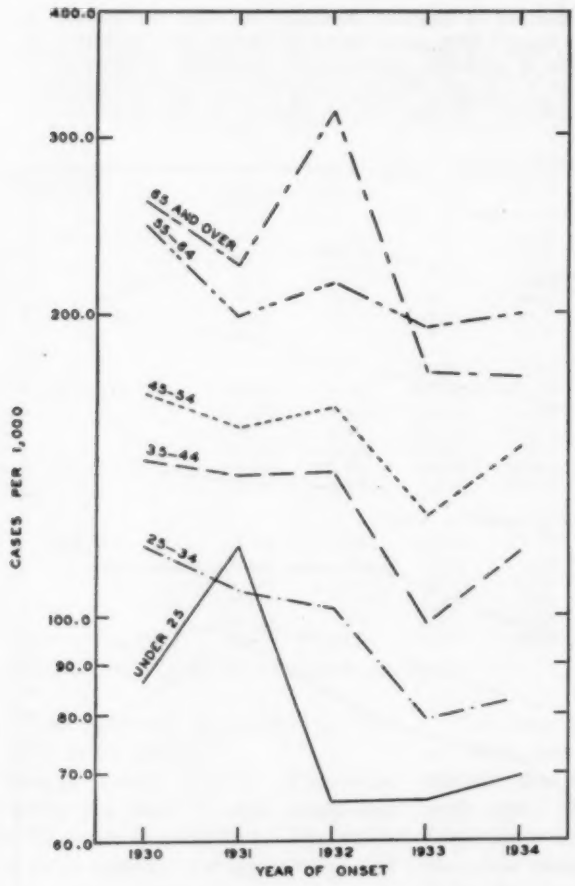


FIGURE 2—Average annual number of cases of disability per 1,000 males on account of sickness and nonindustrial injuries, cases lasting 8 calendar days or longer, by age group and year of onset of disability; experience of white male members of the sick benefit organization of a railroad, 1930–1934, inclusive. (Vertical logarithmic scale). The graph representing "all ages" is not shown; it follows closely the graph for ages 45–54 years.

TABLE 2

Average Annual Number of Cases of Disability per 1,000 Males on Account of Sickness and Nonindustrial Injuries, Cases Lasting 8 Calendar Days or Longer, by Age Group and Year of Onset of Disability; Experience of White Male Members of the Sick Benefit Organization of a Railroad, 1930–1934, Inclusive

Year of Onset of Disability	All Ages [1]	Age in Years as of July 1, 1932					
		Under 25	25–34	35–44	45–54	55–64	65 and Over
		Number of Cases per 1,000 Males [2]					
1930–1934	145.4	85.3	100.8	128.2	152.0	210.2	234.8
1930	160.7	86.3	117.4	142.7	166.9	244.8	258.6
1931	148.1	117.1	106.1	138.1	154.7	198.3	223.1
1932	153.3	65.6	102.2	139.1	161.1	210.4	315.3
1933	123.0	65.8	79.2	98.6	126.4	193.4	174.4
1934	135.3	69.8	83.0	116.2	147.6	199.8	173.4
		Number of Cases of Disability					
1930–1934	15,372	174	1,921	4,241	4,761	3,979	275
1930	4,016	63	625	1,080	1,145	1,013	83
1931	3,341	54	454	967	1,014	788	58
1932	3,169	21	362	907	1,007	798	70
1933	2,305	15	222	590	748	694	34
1934	2,541	21	258	697	847	686	30

[1] Includes a negligible number of persons of unknown age.
[2] For the number of male-years of membership, see Table 1.

not always less than the corresponding rates for years immediately preceding, the time trends of the rates are generally downward. This downward trend in frequency is in harmony with a finding which appeared in a recent paper [18] based on industrial morbidity records covering 18 years. Thus while the time-lost rates followed an upward trend, the frequency rates described a downward one. This is sufficient evidence to enable one to predict an upward trend in the average duration of disability, a prediction which will be found confirmed in the section on average duration which is to follow.

Attention is directed in passing to the upward trend in frequency with respect to age. This trend may be seen in Table 2 by inspection and appears to be upward for each of the 5 years; the upward movement may also be seen in Figure 2 by reading vertically instead of horizontally.

Average duration of disability by age group and year of onset of disability—The disability and frequency rates have been examined, and reference was made to the partial dependence of each on the average duration of disability. Since the present paper is concerned primarily with the behavior of the duration of disability Table 3 and Figure 3 are appropriately presented.

An inspection of Table 3 discloses that the age trend of the rates is upward for the period 1930–1934, and for each year, the ratio of the rate for ages 65 and over to that for under 25 years varying from approximately 2 for the year 1932 to 6 for the year 1930. It will also be observed that the age changes of the rates according to year of onset of disability are such that make impossible the ordering of the years. Thus, while 1932 shows the lowest rate for the age group 65 and over, 1930 shows the lowest rate for the group under 25 years; and while 1933 shows the highest rate for both 65 and over and under 25, 1934 shows the highest rate for the age group 55–64 years. It is of interest also to observe that for each of the 5 years, 1930–1934, the rates yielded by the age groups 55–64, and 65 and over, are greater than the rate for all ages for the corresponding year.

Figure 3 shows graphically the movement of the rates with the passage of time for each of the 6 age groups. It will be observed that the rates for each age group follow an upward trend. When the age group under 25 years is disregarded it is seen that the graphs representing the time changes of the rates of the remaining 5 age groups appear in order of increasing age. With re-

TABLE 3

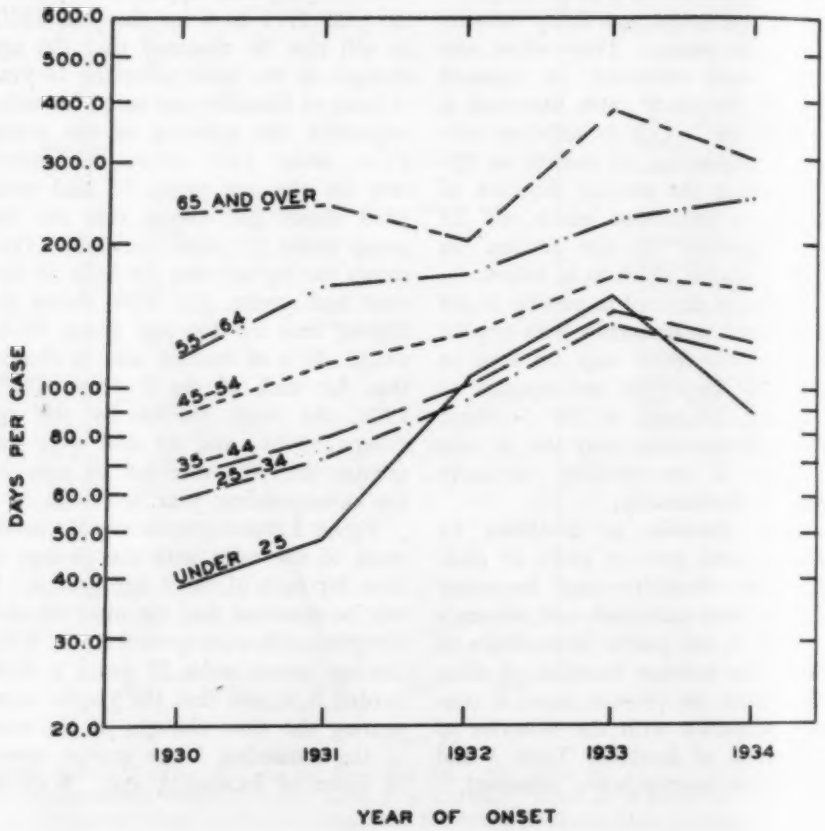
Average Duration of Cases of Disability on Account of Sickness and Nonindustrial Injuries, Cases Lasting 8 Calendar Days or Longer, by Age Group and Year of Onset of Disability; Experience of White Male Members of the Sick Benefit Organization of a Railroad, 1930–1934, Inclusive [1]

Year of Onset of Disability	All Ages [2]	Age in Years as of July 1, 1932					
		Under 25	25–34	35–44	45–54	55–64	65 and Over
1930–1934	129.1	66.1	85.4	97.1	128.6	179.0	253.8
1930	86.7	38.9	59.0	65.6	88.6	115.2	232.9
1931	110.6	49.1	71.6	78.6	113.4	163.4	240.8
1932	131.4	104.3	94.8	102.9	130.3	175.0	206.6
1933	181.1	155.8	137.6	144.6	172.0	225.9	382.4
1934	170.7	89.3	115.7	124.0	160.3	248.4	301.1

[1] For the number of days of disability and the number of cases entering the calculation of the rates, see Tables 1 and 2, respectively.

[2] Includes a negligible number of persons of unknown age.

FIGURE 3—Average duration of cases of disability on account of sickness and non-industrial injuries, cases lasting 8 calendar days or longer, by age group and year of onset of disability; experience of white male members of the sick benefit organization of a railroad, 1930–1934, inclusive. (Vertical logarithmic scale.) The graph representing "all ages" is not shown; it follows closely the graph for ages 45–54.



spect to the rapidity of increase in the time trends it will be observed that when the youngest and the oldest age groups are disregarded the rate of increase is approximately the same for each of the remaining 4 age groups; thus while the trends describe different paths, their rate of increase is approximately the same.

Finally, it must be pointed out that the present morbidity experience offers an excellent example of the inadequacy of the frequency rate as a possible measure of economic losses from sickness and injuries. Thus, while the average annual frequency of disabilities followed a declining trend with time, the average duration of the disabilities showed an upward trend.

SUMMARY

According to published official reports the problem of chronic incapacitation is becoming of increasing importance among the insured wage earning population of Scotland.

Among a group of approximately 30,000 white male American industrial workers it was found that while the average frequency of 8 day or longer disabilities followed a downward trend during the years, 1930–1934, the average duration of the disabilities moved upward.

Evidence is presented to show that, as a measure of economic losses from sickness and injuries, the average frequency rate may lead to erroneous conclusions, since this rate may decline while at the same time the average duration of disability may increase.

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DISCUSSION

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IT is a privilege to discuss Dr. Gafafer's paper on the question of absenteeism in industry, not only because this problem in industrial health has proved to be one of the most important but also because Dr. Gafafer has been a pioneer in this important field. Anyone who reads his writings or listens to his discussions on the subject cannot help but be impressed with his exactness and the care with which he presents the problem.

We have known that the problem of absenteeism in industry was a big and

an important one, and we realized that the relationships of many of its factors needed to be studied. We further realized that it is a great drain on industrial production for employees to be disabled an average of 10 days each year. However, the conclusions that Dr. Gafafer has drawn from his present paper have an importance far beyond the significance of the average 10 day loss which has been shown to occur in industry. I would like to call your attention to two trends in industry that may be significant in this increase in absenteeism in industry that Dr. Gafafer has concluded is occurring. The first factor which he has already mentioned generally is the increasing age of employees. This increase in the average age is due in great part to the increased emphasis being placed on seniority. With the seniority provisions existing in most industries employees are remaining on their jobs until they are much older, and because of lowered mortality, particularly in youth, more persons are living to the older ages. If then the older employee is progressively losing more time as Dr. Gafafer suggests, it is evident that absenteeism will increase, and we do not know yet what the ceiling will be. A second factor which must be seriously considered is the effect of military conscription, because this will mean the removal from industry of many of the younger group of men, thereby leaving a still larger percentage of older employees. Accordingly we should experience an increase in total days of disability during the years military conscription is in effect. This matter should receive a great deal of consideration because at this time every hour of available work is so important for the production of materials necessary for national defense. Furthermore, there is no reason to believe that an individual will cease to be disabled when he enters the military service. In fact there is every reason to believe that the frequency and average duration of disability will continue if it does not actually increase. Therefore it would be interesting if absenteeism in the military service could be studied in the same way as it is being studied under Dr. Gafafer's supervision so that proper comparisons could be made.

To explain this relationship of age and absenteeism a little better, I in-

TABLE 1

Employee Disabilities According to Duration of Disability and Age of Employees Beginning During the Period January 1 to June 30, 1939

Duration of Disability	*Ages of Disabled Employees*						*Total*	*Per cent*
	Less than 21 Yrs.	*21 to 30 Yrs.*	*31 to 40 Yrs.*	*41 to 50 Yrs.*	*51 to 60 Yrs.*	*61 and Over*		
3 to 7 days	0	84	153	89	38	9	373	52.8
8 to 13 days	0	17	44	23	13	2	99	14.0
14 to 60 days	0	47	70	49	13	5	184	26.0
60 to 98 days	0	6	11	15	7	3	42	6.0
Over 98 days	0	2	3	3	1	0	9	1.2
Total		156	281	179	72	19	707	100.0
Per cent		22.0	39.8	25.3	10.2	2.7	100.0	....
Per cent of employees in each age group	1.1	25.15	39.86	23.90	8.28	1.70	....	....
Number of long term absences over 13 days	0	55	84	67	21	8	235	....
Per cent of long term absences by age group	0	23.4	35.8	28.5	8.9	3.4	100.0	....

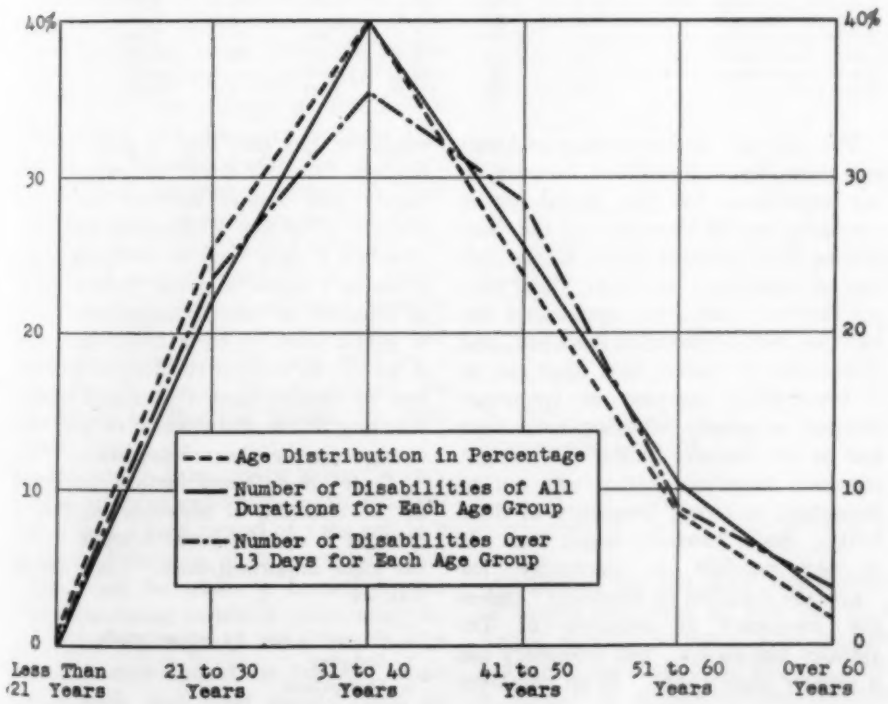
NOTES: 1. Disabilities and (or) absences of less than 3 days not computed.
2. This age distribution is based on 4,568 insured employees, representing about 98 per cent of the employees.

spected the records of the 707 consecutive disabilities of 3 days or more beginning during the period January 1 to June 30, 1939. The results are shown on Table 1. You will note that for the age period 21 to 30, the rate for disabilities of all durations was slightly (12.5 per cent) less than the age distribution. For the age group 31 to 40 it was identical with the age distribution; for the age group 41 to 50 it was 5.5 per cent in excess of the age distribution; for the age 51 to 60 18.8 per cent in excess; and for those over 60 it was 37.1 per cent in excess of the age distribution.

When the longer disabilities, *i.e.*, those over 13 days were used as a comparison, similar results were obtained. The percentage of disabilities was less than the percentage of employees up to age 40 inclusive. For the age group 41 to 50 the disabilities were 19.2 per cent above the age distribution; for 51 to 60 years this excess was 6.4 per cent; and for those over 60 years the excess was 100 per cent. However, it is very important to explain that it is not safe to draw any definite conclusions from 707 disabilities, nor from 4,400 employees. The number of disabilities and the size of the employed group is too small to warrant conclusions over any 6 month period of experience. It does however agree with Dr. Gafafer's findings. This relation of age and disability rate is better shown by a graphic scale shown on Figure 1.

FIGURE 1

RELATIONSHIP OF DISABILITY FREQUENCY TO AGE FOR 707 CONSECUTIVE DISABILITIES OF 3 DAYS OR MORE FROM JANUARY 1, TO JUNE 30, 1940



You will note that the disability rate curves are at a lower level for the age periods prior to age 41, and that thereafter the rate curves are uniformly at a higher level than the age curve.

Dr. Gafafer has shown that disability frequency can decrease, and at the same time the average duration can increase. I thought it would throw some additional light on this subject to show you the statistics of the Chevrolet-Grey Iron Foundry for 1940 (to August 23) concerning the relation of frequency of disabilities and total days disabled.

TABLE 2

Number of Absences and Days Disabled of Employees According to Length of Disability For the Period January 1 to August 23, 1940

	Absences				Days Disabled			
Length of Absence or Disability	*No. of Absences*	*Per cent of the Total*	*Absences Cumulative*	*Per cent Cumulative*	*Days Lost*	*Per cent of the Total*	*Days Lost Cumulative*	*Per cent Cumulative*
Less than one day	125	4.3	125	4.3	68	0.4	68	0.4
1 day and less than 2	1,424	49.1	1,549	53.4	1,413	8.7	1,481	9.1
2 days and less than 3	506	17.7	2,055	71.1	1,014	6.2	2,495	15.3
3 days and less than 4	171	5.9	2,226	77.0	511	3.3	3,006	18.6
4 to 7 days inclusive	280	9.5	2,506	86.5	1,022	6.3	4,028	24.9
8 to 13 days inclusive	126	4.3	2,632	90.8	1,293	8.0	5,321	32.9
14 to 30 days inclusive	127	4.3	2,759	95.1	2,575	15.9	7,896	48.8
31 to 60 days inclusive	101	3.5	2,860	98.6	4,687	28.9	12,583	77.7
61 to 97 days inclusive	29	1.0	2,889	99.6	2,147	13.3	14,730	91.0
98 days and over	12	0.4	2,901	100.0	1,458	9.0	16,188	100.0

You will see the importance of keeping short term disabilities because in our experience for the period under consideration, 86.5 per cent of the disabilities had occurred prior to the 8th day of disability. However, these 86.5 per cent of disabilities represented but 24.9 per cent of the total days lost, and therefore it is evident that there can be a tremendous decrease in frequency without materially affecting total days lost as Dr. Gafafer found. One might conclude therefore that it was not so important to record frequency of disability. Such, however, is not true. It is not possible to determine the "average duration of disability" unless the frequency is available as Dr. Gafafer has shown. But frequency has a greater significance. If an employee is absent 140 days, only one employee replacement is necessary. The replacement cost to industry is small and there is a minimal interference with the flow of production. However, if 10 employees lose 2 days each, 10 replacements, however temporary, are necessary, and yet only one-seventh as many days are lost as compared with the long disability. I realize that in the first case there may be a drain on the welfare department to support the disabled individual and his family, but if you think of the community, frequency is important for another reason. If an employee has one cold a year and it disables him 10 days, he exposes his family and fellow workers over one period. If he has 5 colds and they disable him 2 days each he is exposing his contacts 5 times, and the vicious circle of infection is thereby magnified. Also it would seem to be a basic fact that if we are to control the longer disabilities we should have a thorough understanding of the distribution of and rate changes in the short disabilities.

There are so many factors concerned in the question of absenteeism that I thought it would be worth while to list the more important ones. They are as follows:

1. Diagnosis and by whom made
2. Industry
3. Occupation

4. Length of disability in calendar days
5. Number of work days lost
6. Age and race of absentees
7. Length of employment in occupation; hours of work per day, per week and per year
8. Shift on which the employee works
9. Season of the year
10. Recurrence of disabilities due to the same or different causes
11. Insurance or benefit plans
12. Amount of checking of absentees

A paper could be presented on any one of these factors, and therefore we do not have the time to consider them in detail. However, it is important to explain that, as a rule, several of these factors can be and usually are considered in relation to each other. Dr. Gafafer's paper concerns the relation of age (No. 6) and length of disability (No. 4). The fact that any of these factors may be considered in relation to any one or more of the others speaks for the complexity and confusion of this important matter.

Furthermore, I should explain that the discussion of the relationship of age and disabilities is not definitely in line with Dr. Gafafer's paper. His paper pertains to the *changes* in duration of disabilities and attempts to show that while the frequency of 8 day or longer disabilities followed a downward trend for the years covered, the average duration of disabilities moved upward. To arrive at such a conclusion it is necessary, (1) to have a sufficient number of employees under consideration, (2) to keep records in the same way for a number of years, (3) to submit the statistics to identical studies for each year.

Because it is necessary to have a very large group of employees under observation over a long period of time and in a standard fashion, it is important that this work be under a central bureau or department to which coöperating industries will report. The local health departments should be trained to do this work, and their results could be coördinated by the state departments of health and then in turn by U. S. Public Health Service. This problem has now gone beyond the stage at which it should be considered experimental.

FIGURE 2

ABSENCE CARD

Clock No. _____

Name _____

TIME DEPT. ITEMS
- Soc. Sec. No.
- Occupation
- Occ. Code No.
- Off From _____ To _____
- Work Days Lost

FILLED IN BY FOREMAN
- Requisition by _____ Foreman
- Department
- For job of
- Requiring Light __ Medium __ Heavy Work __
- Standing or Sitting

EMPL. DEPT.
- O. K. for Clock card
- Request for Phys. Exam.

MEDICAL DEPT. ITEMS
- Pass Home PNTW ANTW
- PFW By
- Date at AM - PM
- Employee (is) (is not) physically qualified
- For job Med. Dept.
- Important Defects
- REMARKS:
- Disabled From _____ To _____

Absence reported to

on at AM - PM

Reported in Person __ by phone __ by note other __

By Messenger (name)

No report

REASON FOR ABSENCE:

GI-359

It has definite practical applications, and the stage has been set for more universal application of this public health study.

As a suggestion to those who wish to keep statistics on absenteeism, I would like to show the absentee card we are now using at the Chevrolet-Grey Iron Foundry. It has proved to be indispensable for keeping records on absenteeism (Figure 2). One of these cards is placed in the card rack of each absent employee within 2 hours after he fails to report for work. If he is absent 3 work days, the Medical Department approves his return to work, and as definite a diagnosis as possible, together with the length of disability in calendar days and work days lost is ascertained. If the employee is absent 1 or 2 work days, the employment department approves the employee for work, obtaining the same information as closely as possible. The front of this card is designed for use by the foremen sending employees to the Medical Department.

In conclusion I would like to commend Dr. Gafafer for his very suggestive and informative paper and to thank him for giving me the opportunity to discuss it.

Use of the Culture Method in the Clinical Management of Gonorrhea*

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DURING the past 1½ years we have been using the culture method concurrently with the taking of smears in the diagnosis and treatment of gonorrhea at the Social Hygiene Clinic of the Detroit Department of Health. In the period ending July 1, 1940, we have examined over 4,500 cultures from persons who have presented themselves at this clinic. These cultures were from men, women, and children of all ages, and represent a good average of the types of cases usually seen in a clinic of this kind in a metropolitan area.

The work was begun in November, 1938, on a small and more or less experimental scale, and gradually increased until August, 1939, when it required the full-time service of a technician. Cultures made during this experimental period together with their more widespread use in our clinic is what we are now attempting to evaluate, for we feel it will answer the questions of those who are planning and have not yet attempted their use.

In general, the methods used are described in the 1936–1937 American Public Health Association *Year Book* by Dr. C. M. Carpenter.[1]

For the collection of the specimens a previously sterilized swab was used. The swab was not too tightly rolled so as to permit moderate absorption of the exudate. Eight or nine swabs were usually sterilized in a tube, depending upon its size. This swab with its exudate was then immersed in a broth which served to keep the swab moist as well as a diluting fluid. The broth was prepared by dissolving 2 gm. of Proteose peptone No. 3 (Difco) in 100 cc. of distilled water along with 0.5 gm. of sodium chloride.

Sufficient broth to cover the cotton part of the applicator when immersed (approximately 2–3 cc.) was then put in individual tubes and sterilized. Specimens were planted 1 to 2 hrs. after having been taken, or as long as 6 to 8 hrs. if kept in an ice box. The swab was twirled vigorously in the tube until most of the exudate had been transferred from the swab to the broth. One drop was taken up with the swab and streaked across the plate both ways. If the exudate emulsion seemed too cloudy, it was diluted with Proteose peptone No. 3 broth and thus better distribution of growth was obtained.

* Read before the Laboratory Section of the American Public Health Association at the Sixty-ninth Annual Meeting in Detroit, Mich., October 8, 1940.

The media used was made by preparing a double strength suspension of Proteose No. 3 agar (Difco) containing 9 gm. of dehydrated media in 100 cc. of distilled water. This was then steamed in an Arnold sterilizer, shaking several times, until the agar was dissolved. This was then sterilized in an autoclave for 20 min. at 15 lb. pressure.

The 2 per cent solution of desiccated hemoglobin (Difco) was made by placing 2 gm. of dry hemoglobin into a mortar and grinding with a pestle, with frequent pouring off of the hemoglobin that had gone into solution, and adding distilled water to the undissolved portion until the 100 cc. volume was reached and most of the hemoglobin had gone into solution. This was filtered through several thicknesses of gauze to make sure no lumps were present and sterilized at 15 lb. pressure for 20 min. We have recently been using another method for dissolving the hemoglobin which was suggested by Miss Wirzikowski [2] of the Toledo Department of Health. By this method 2 gm. of hemoglobin were placed in a rubber-stoppered flask containing 100 cc. of distilled water and shaken vigorously. This was filtered through several thicknesses of gauze and sterilized in the usual manner. Equal amounts of the hemoglobin solution and agar were mixed at 50°–60° C. under aseptic conditions and distributed to sterile Petri dishes. As soon as the media had hardened, the plates were inverted and held at room temperature until used. We found it more satisfactory for planting specimens to use plates that had been poured the previous day.

In the preparation of the differential sugar media, phenol red broth base (Difco) with 0.15 per cent agar was placed in ½ x 3 in. tubes and sterilized. The individual sugars, 10 per cent solution of dextrose, maltose, lactose, and saccharose, were sterilized by Berkefeld filtration and added to the semi-solid phenol red broth base with a hypodermic syringe, in sufficient quantity so that a 0.5 per cent sugar concentration was reached in the finished product.

The plates were incubated at 36° C. in an inverted position for 36–48 hours. The concentration of approximately 10 per cent carbon dioxide was obtained by incubating the plates in 5–10 gal. tin cans and placing a lighted candle in the can before putting on the cover. The candle will not burn when the carbon dioxide content becomes approximately 10 per cent.

At the conclusion of the incubation period, the uncovered plates were tilted by being placed on one edge of the cover, so that the 1 per cent solution of para-amino dimethyl aniline monohydrochloride (Eastman Kodak Company), which was sprayed on with an atomizer, drained from the surface of the plate and did not remain on the colonies. Growth of the gonococcus was indicated by the development of transparent convex colonies, 1 to 3 mm. in diameter, having undulating margins and which turned black upon the application of the dye. Cultures are sometimes seen in which the colonies coalesce, having but few isolated colonies at the margins. Only ⅓ of the plate was sprayed so that colonies unaffected by the dye could be used for further study and fermentation tests. Under the effect of the dye, the colonies turn pink and then gradually turn black. For satisfactory subculture the transference of colonies should be made during the pink stage, because they are easily killed by the dye.

A typical Gram-negative diplococcus from a typical oxidase positive colony was regarded as the gonococcus.

Fermentation tests were not done on all of the cultures. All of them which were examined proved to be *Neisseria gonorrhoea* except three, one of which

was *Neisseria sicca* and two *Neisseria catarrhalis*.

As soon as cultures were available in sufficient quantity we began using them in all of our diagnostic and treatment clinics. The majority of our clinicians were not especially familiar with their use, and each acquired his own method

TABLE 1

Comparison of Results Obtained by Culture and by Direct Examination of Smears

Men

Laboratory Test Used		*Specimens for Diagnosis*		*Specimens from Treated Cases*	
Direct Smear	*Culture*	*Number of Specimens*	*Per cent*	*Number of Specimens*	*Per cent*
—	—	881	74.4	1,043	82.6
+	+	163	13.7	74	5.7
—	+	83	7.0	105	8.3
+	—	56	4.7	41	3.2

Table 1 is a summary of results of 2,446 cultures made from material obtained from male patients, 1,183 being made for diagnosis of gonorrhea and 1,263 cultures being made for test of cure. Cultures and smears agreed in 88.1 per cent of diagnostic cases and 88.3 per cent of treated cases.

TABLE 2

Comparison of Results Obtained by Culture and by Direct Examination of Smears

Women for Diagnosis

Laboratory Test Used		*Urethra*		*Cervix*	
Direct Smear	*Culture*	*Number of Specimens*	*Per cent*	*Number of Specimens*	*Per cent*
—	—	954	94.9	974	83.1
+	+	6	0.5	51	4.3
—	+	40	3.9	131	11.1
+	—	5	0.4	15	1.2

Table 2 is a summary of 2,276 cultures made from material obtained from female patients who had been presented for diagnosis of gonorrhea. Here again cultures and direct smears agreed in about 91.4 per cent of specimens. The culture was positive in a total of 171 cases in this group when smear was negative.

TABLE 3

Comparison of Results Obtained by Culture and by Direct Examination of Smears

Women for Treatment

Laboratory Test Used		*Urethra*		*Cervix*	
Direct Smear	*Culture*	*Number of Specimens*	*Per cent*	*Number of Specimens*	*Per cent*
—	—	923	95.1	948	88.4
+	+	13	1.3	34	3.1
—	+	28	2.8	74	6.9
+	—	6	0.6	16	1.5

Table 3 is a group of 2,042 cultures made from female patients who were clinically cured of gonorrhea. In only about 1 per cent was culture negative, although positive direct smear was obtained.

of collecting specimens. Since our clinics are attended in large numbers and the pressure of work is great, it may perhaps be safely said that in many instances no particular care was taken in the collection of specimens. In most instances the smear was taken first and the cultures second. The smears from all cases clinically suspicious of gonorrhea were immediately examined and the patient put under treatment before leaving the clinic. If the patient was still considered clinically a gonorrheal suspect, he was asked to return for another smear and culture if the latter had not already been taken.

It has been a rule in our clinic that all cases presenting themselves to our division are first admitted to our diagnostic clinic for a routine examination for evidence of venereal disease. In the case of females a routine smear is taken from the urethra and cervix and a pelvic examination is made of every applicant.

Cultures were made from 130 male adults diagnosed as having gonorrhea who presented themselves to our diagnostic clinic. These were mostly voluntary patients and presented themselves usually because of certain symptoms present, such as discharge, frequent urination, etc. Some of these males had various complications such as epididymitis, arthritis, prostatitis, etc., at the time of admission to the clinic. Cultures in this group were not made as a rule on the first visit. These cases were divided into several groups such as acute, subacute, observation, and acute gonorrhea with chronic prostatitis, and so on. These are merely clinical groupings that have developed with experience and aid us in classification for diagnosis as well as treatment purposes.

In the group designated clinically as acute gonorrheal urethritis—including those with associated prostatitis and epididymitis it will be seen that there were about 8 per cent of cases where the culture was negative although the smear was positive. We have felt that this might be due to one or more of several things and need not be a criticism of the culture alone. This group is the most difficult of all patients to control and is the one group where patients' own statements are least reliable. These patients present themselves at the clinic at various stages of the disease. Most of them

TABLE 4

Laboratory Results

Clinical Diagnosis in 130 Male Cases

Smear	*Culture*	*Acute G.c. Urethritis*	*Acute G.c. Urethritis— Chronic Prostatitis*	*Acute G.c. Urethritis Chronic Prostato Vesiculitis*	*Acute G.c. Urethritis Acute Epididymitis*	*Acute Prostatitis*	*Sub-Acute G.c. Urethritis*	*Observation Gonorrhea*	*Observation G.c. Chronic Prostatitis*	*Chronic Prostatitis*	*Chronic Prostato-Vesiculitis*	*Chronic Epididymitis*	*Chronic Prostatitis Chronic Epididymitis*	*Negative*	*Total*
+	+	16.2	3.0	...	1.5	...	0.8	11.5	5.2	1.5	0.8	...	...	2.3	42.6
+	—	6.2	0.8	...	0.8	...	...	1.5	3.8	2.3	...	...	...	6.9	22.3
—	+	2.3	2.3	0.8	0.8	...	...	7.7	5.4	4.6	...	0.8	0.8	3.8	29.3
—	±	0.8	...	...	...	...	...	2.3	0.8	...	...	...	...	...	3.9
+	±	...	...	...	...	...	...	0.8	0.8	...	...	...	...	...	1.6
X.C.D.	+	...	...	...	...	0.8	...	...	...	...	...	...	...	...	0.8

Table 4 is a chart of comparison of culture and smear results in the various groups of male gonorrhea patients. It will be seen that in the acute case the smear and culture agreed in the majority of instances but that the direct smear was positive and culture negative in a relatively high percentage of cases (22.3 per cent).

have had something injected locally and many have had internal treatment given them either by a previous physician, druggist, or friend. Many of late have been on sulfanilamide medication which no doubt would have a deleterious effect on cultural growth of the gonococcus. The method of obtaining specimens for cultures may also have some bearing on later growth. In order to obtain a more rapid diagnosis we have routinely used the direct smear in this group—if this was negative by Gram's stain the patient would be asked to return in 24 hours. At his second visit 24 hours later direct smears would again be taken and at this examination a culture would also be taken. Thus 2 sets of direct smear were taken within 24 hours and one culture taken at 2nd visit, so that the direct smear was given 2 chances to 1 for the culture. In a small group where cultures and smears were taken routinely from smear positive acute cases and above factors were ruled out, gonococcal growths were almost always obtained.

In the groups designated as observation gonorrhea, chronic prostatitis, and observation gonorrhea and chronic prostatitis, the cultural method of diagnosis was a distinct aid. In these groups clinical manifestations were not sufficient to establish a definite plan of attack. In these groups combined, the cultural method picked up nearly three times as many positives as did the direct smear examinations alone. This was not only of value in preventing the necessity of repeated examinations, but also aided us in beginning treatment earlier and thus controlling the possibility of spread of infection that much earlier. There is no doubt that this group of patients is largely responsible as far as the male is concerned in the promiscuous spread of this disease.

The diagnosis of gonorrhea in the female has always been considered a problem chiefly because of the tendency of the disease to become chronic. Although some patients do present themselves voluntarily because of a discharge, burning on urination, pain due to Bartholin abscess, or pain from a salpingitis, a great majority of our female gonorrhea is found in contacts to known cases of gonorrhea, who therefore are requested to come in for examination. Other cases are found in the routine examinations for venereal disease and in alleged prostitutes who are held for health examination by the police department. This was well illustrated in the study of 148 females subsequently diagnosed as having gonorrhea.

TABLE 5

Laboratory Results

148 Women — Diagnostic Cases

Smear	*Culture*	*Discharge*	*Contact*	*Routine*	*Police*	*Burning on Urination*	*Bartholin Abscess*	*Check on Previous Positive Culture*	*Total*
+	+	5.4	8.8	5.4	0.7	...	2.0	...	22.3
+	—	0.7	4.7	1.4	...	0.7	...	...	7.5
—	+	4.1	35.0	12.8	5.4	...	...	2.0	59.3
—	±	...	0.7	4.1	...	...	...	...	4.8
X.C.D.	—	...	2.0	0.7	1.4	...	...	...	4.1
X.C.D.	+	...	...	1.4	...	...	...	...	1.4
+	±	...	0.7	...	...	...	...	...	0.7

Table 5 is a chart of results obtained from cultures and smears in the diagnosis of gonorrhea in women. The most important group here is the contact group wherein 35 per cent of cases were positive by culture, although negative by smear.

It will be noted that the contact group was the largest and that these were diagnosed principally by the culture method. It was noted that although these patients did not complain of a discharge, a purulent or mucopurulent cervical discharge was found in the majority of cases and was often accompanied by an eroded cervix. Occasionally a Skenitis or salpingitis was found. We have been taking urethral and cervical smears and cultures on all females in both the diagnostic and treatment clinics. The cervical smear or culture was taken first because we felt that the insertion of the speculum might aid in forcing out any discharge from the urethra and thus give a better urethral preparation. It was also found that when considerable cervical discharge accompanied the swab the growth of the gonococcus was not very luxuriant or was entirely absent. Stout and Todd [3] have advised wiping away all surface discharge and getting material well up in the urethra and cervix.

Cultures have also aided us in reducing the load in our female diagnostic clinic. Prior to their use it was the policy of our clinicians to request from 1 to 5 check slides upon known contacts, or clinically suspicious cases, as for instance, a patient with an eroded cervix, purulent or mucopurulent discharge, Skenitis, etc. In a previous study of 115 female gonorrhea cases when smears alone were used, it was found that 80 per cent of our cases were diagnosed on the first smear, 12 per cent on the second smear and the remainder on 3 to 5 smears. With the advent of cultures it was decided to use only the smear at the first examination; if this was negative, a smear and culture were to be taken upon all gonorrheal suspects at the next visit, which was usually 1–7 days after the first admission to the clinic. If further tests were felt necessary the clinician usually requested a slide after the next menstrual period. We have felt therefore that the culture method has been of distinct value in the female clinic, particularly in the contact group because it enables us to keep both marriage partners under treatment at the same time as well as keep down the probable reinfection of children in the home.

We have also used the culture method in the diagnosis of gonorrheal vaginitis. Much of this work was done by the dry or applicator method of collecting the material, which we feel is not very satisfactory. We have recently changed to the wet or catheter method described by Benson,[4] but we are not ready to report on this work. In general, we feel that it is far superior to the dry method.

Sulfanilamide has been adopted as the standard treatment in our clinic although neoprontosil, uleron, promin, sulfapyradine and allied drugs have also been used. Local chemical treatments and biologicals have been prescribed when reactions to sulfanilamide occurred or when clinicians felt that their use was indicated. Dosages varying from 40 to 50 grains daily depending on body weight were prescribed and this dosage maintained for a period of 1 month. Smears were taken after the first week of treatment and continued weekly until 5 consecutive slides were negative. A culture usually accompanied the 4th slide although some clinicians preferred to take cultures at other times during the period of treatment. After 5 consecutive negative slides and a negative culture the patient was asked to return in 1 month for a slide and culture. Female patients were requested to return in 1 month—after the next menstrual period. Subsequent follow-up was left to the discretion of the clinician and depended principally upon the results of laboratory and clinical findings. Prenatal

patients were requested to return every month until delivery, for a slide and culture.

In a study of 76 females in which smears and cultures were taken to determine cure, 26.5 per cent were found to be positive by both the slide and culture methods. In 6.5 per cent the smear was positive but the culture negative; 62 per cent were negative by the smear but positive by the culture method. Of the latter there were 34.4 per cent who had from 5–12 negative smears, and on that basis would have been dismissed as possibly cured had the smear method alone been used. These could be classified as potential carriers although the possibility of reinfection could not be ruled out. This has also been pointed out by Carpenter in a recent article.[5]

Previous to the use of cultures the chief criterion of cure in the male adult has been the examination of smears obtained after prostate massage. An arbitrary standard of 5 consecutive such prostate smears was necessary before a patient would be discharged as "probably cured." In a study of 153 males who were considered clinically well, 32.7 per cent were found positive by both slide and culture methods. In 45.7 per cent the slide was negative but the culture was positive. In an additional 4 per cent culture was doubtful positive and slide negative. Only in 17.6 per cent was the single culture negative, although one or more of the several slides taken were positive. This again may not be entirely a failure of the culture itself. Several factors may be blamed in this 17.6 per cent of failure of cultural growth in these 27 cases (17.6 per cent of the total). First it might be stated that in most cases only one culture per patient was made, whereas 5 or more smears were made on each patient up for discharge. Again, inasmuch as these smears and the culture were made from material obtained after prostate massage, often there was not enough material available for both procedures. Two smears were taken first and then the culture. This could leave the material available for culture as less potent than that used for smears. Again the effects of previous treatment may not have been sufficiently worn off so that organisms were found in direct smear but would not grow on cultures.

Stout and Todd [3] have expressed the possibility of the organism being dead when vigorously treated. Of these 27 cases, 11 were on sulfanilamide or allied drugs at the time that cultures were taken, 9 were receiving local irrigations, and in only 7 no treatment was being received. Of course in this class of people many patients use additional treatment unknown to the clinic physicians. It is therefore felt that the culture, when above factors are guarded against, would be a very reliable index in the test of cure.

However, it is a practical fact that in many instances the above factors cannot definitely be excluded so that the smear method should not be discarded, but that smear and culture both should be used. It is also apparent that the direct smear is the more practical for the private practitioner. However, for use in public health clinics, cultures have been a valuable aid and are becoming established as a routine procedure. There is no doubt that further extension of the use of gonorrhea cultures will be a great factor in the public health control of this disease.

SUMMARY

1. In this study of more than 4,500 cultures which have been made to determine the presence of the gonococcus in men, women, and children attending the Social Hygiene Clinic of the Detroit Department of Health, we have found Difco proteose peptone No. 3 agar

with 2 per cent hemoglobin to be satisfactory for gonococcus growth.

2. The use of gonorrhea cultures has been of distinct value in:

a. The confirmation of a clinical diagnosis of gonorrhea especially where the disease was chronic in both males and females.
b. The isolation of gonococci from sex contacts, especially females—who would be usually unaware that they harbored the disease.
c. They were an aid in the determination of the time for discharge as probably cured, as many times the slides would be negative before negative cultures were obtained.

Occasional negative cultures were obtained although direct smears were positive and clinical findings were suggestive. Thus we do not feel that the direct smear should be discarded in favor of the culture method alone, but that most efficient results will be obtained if the two are used together. The direct smear may aid in getting patients under treatment earlier and the culture will aid in discovering cases not otherwise apparent and will be of exceptional value in preventing release of patients still in an infectious condition. Thus a more widespread use of the culture method in public health clinics will be a great aid in the public health control of gonorrhea.

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Place of Maternal and Child Health Services in a Generalized Program in a Health Unit*

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THE latter part of 1939 the Children's Bureau of the U. S. Department of Labor through the Maryland State Department of Health inquired whether the Anne Arundel County Health Department would be interested in adding delivery and pediatric services to our program. Before accepting the offer, we paused to take stock of what we already had in order to determine whether or not such services would be feasible in our county and whether we could integrate them with what was already in operation. It is necessary to know something of what we were doing in order to understand fully what we are doing now, and so the following summary of conditions in the county is presented.

THE COUNTY PROGRAM

Anne Arundel County stretches from the southern border of Baltimore about 50 miles along the Chesapeake Bay. It has a population of 65,000, of whom 25 per cent are colored. These last are fairly evenly distributed, with the greatest concentration in and about Annapolis. The white population is of American stock. There are no foreigners. That part of the county contiguous to Baltimore is suburban in character, but the rest of it, with the exception of Annapolis, is strictly rural. General agriculture, tobacco raising, and fishing are the chief means of livelihood. There are no manufactures. Annapolis is the only incorporated town and has a population of about 13,000, exclusive of the U. S. Navy personnel and midshipmen at the Naval Academy.

There is one general hospital of 100 beds located in Annapolis. This is a semi-private institution, operated by a self-perpetuating lay board, and receives financial assistance from the State, County, and City of Annapolis. There are 28 resident physicians, 3 of whom are colored, exclusive of those attached to the Naval Academy, Fort Meade, and state institutions. In addition, there were about 27 midwives.

A full-time health department has been in operation since 1930. It began as a four piece unit, but has gradually expanded until, in the fall of 1939, it consisted of a health officer, assistant health officer, sanitarian, nurse supervisor, 7 field nurses, and 3 clerks, a total of 14. The health program is a generalized one, consisting of services to prenatal and postnatal cases, well infants and preschool children; communicable disease control, including tuberculosis, venereal diseases, and pneumonia; supervision of the health of school children, including dental service, child guidance, orthopedic service; and a sanitary service, embracing water and milk control. These services are applied through clinics, home visiting by public health nurses, sanitary inspections, surveys, etc. The maternal and child hygiene clinics, for both white and colored, are held at stated times in various parts of the county and are conducted by the health officer or his assistant, often with the assistance of local physicians. Standard prenatal care is given. Abnormal cases are referred to a special clinic in Annapolis conducted by a specialist from The Johns Hopkins Hospital. Other special clinics, such as tuberculosis, child guid-

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ance, and orthopedic, are conducted by specialists from Baltimore. A nutritionist attached to the State Department of Health spends considerable time in the county, advising the nurses and helping in the clinics. Other specialists attached to the State Department of Health are available when needed. The county is used as a training center for state personnel, for field work for health officers by The Johns Hopkins School of Hygiene, and as a field training center for public health nurses by William and Mary College and the Catholic University.

Two years ago, in order to make the health program more elastic and to bring public health a little nearer to the people, the county was divided into 7 districts, with a nurse in charge of each. In addition to the central administrative offices in Annapolis, there is a health center in each district.

The physicians in the county are coöperative. They support the health program and make extensive use of the nurses and of the clinics. It has been our policy to have as many of them as possible participate in the health work by helping in the clinics. Eight different doctors help in this way each month. At the request of the health officer, the Medical Society appointed a committee to advise with him. A similar committee, which includes the health officer, acts in an advisory capacity to the County Welfare Board and the Red Cross.

Relationships between the department and other official and private agencies are cordial and there is free exchange of services. Five of the 7 health centers are maintained by local health associations formed for the sole purpose of promoting health work in their localities. Individual service, including transportation, is available at all the clinics. Women's clubs, Parent-Teacher Associations, and other groups have health committees who either work with the nurses or help in some other way. Our friends and supporters, they serve a valuable purpose in translating the work of the health department to their neighborhoods in language which is readily understood. Through their advocacy, much is accomplished in a shorter time than would otherwise be possible.

Although we had no delivery service and no pediatric service, we considered we had a fair set-up. We handled about 300 women each year in our prenatal clinics and got postnatal examinations on most of them. Not many infants and preschool children escaped us. We did and still do much preventive work with them, including vaccination and immunization. We used the local hospital to a considerable extent, but most of our abnormal prenatals and ill children were sent to hospitals in Baltimore. However, we had begun to have a strong suspicion that we would never have a really generalized, preventive program until we made provision for some sort of help at delivery. The survey of our set-up and resources showed no reason why this could not be done. On the contrary, there seemed every reason, including the progressive attitude of our physicians and public generally, why we should undertake it. Having reached this conclusion, we presented the proposed plan to the State Board of Health, the Medical and Chirurgical Faculty, the local Medical Society, the County Welfare Board, and other groups, all of whom approved it.

PROPOSED PLAN

The Children's Bureau's proposals, while leaving to us the working out of details, were specific as to what should be done. They included the giving of adequate prenatal care, delivery service, and pediatric service to two groups—those who cannot afford to pay anything, and those who, while able to pay a physician, cannot afford to pay for trained nursing service, the services of specialists, or hospital care, should these be required. This second group embraces those families who, while able to live decently and pay their way, have no surplus. They can buy food and clothes, pay rent, and perhaps carry some insurance. They can also pay moderate fees to a doctor for delivery or for occasional medical service to the children. But if complications arise and special medical service or hospitalization is required, they are sunk. Neither can they afford the kind of professional nursing care which we now recognize as essential at the time of delivery. In my opinion, service to this group is the most interesting and valuable part of the program, constituting a pioneer effort to apply these legitimate public health activities to a group of the population who will benefit most from them. Funds were subsequently budgeted for the following purposes:

1. To pay physicians for prenatal care and delivery service to those in special need.
2. To furnish nursing service to this group at the time of delivery, and to those who while not in the lower economic groups are still without sufficient resources to pay for adequate nursing care at the time of delivery.
3. To provide hospital care for both groups provided cases are sufficiently abnormal to make hospitalization desirable, or provided home conditions are so bad that home delivery would be indecent or dangerous.
4. To provide medical care and hospital care when indicated for ill children whose parents are unable financially to furnish this themselves.
5. To provide the services of specialists to conduct maternity clinics (antenatal and postnatal examinations, and advice), and pediatric clinics and to serve as consultants when such special services are needed.
6. To provide for other specialists, special services, supplies, equipment, or personnel, as the needs of the plan indicate.

It took about 2 months to get this program in operation. The delay was caused largely by difficulty in finding adequately trained public health nurses, and by delays in the delivery of supplies and equipment. We took advantage of this period to study what others who were conducting similar programs were doing. We also used the time to evolve standing orders for our nurses, a fee table for the physicians, an agreement with the local hospital, and various forms, methods of bookkeeping, etc.

HOW IT WORKS

At this writing, the program is in full swing. Our nursing force has been doubled; we now have 2 supervisors and 14 field nurses. Each district has 2 nurses, each serving a population of about 4,500. The nurses take turns on "first call" for delivery service. While they are waiting for a case to come off, they carry on all the other activities demanded of a generalized program. When one nurse is on a case or off duty, the other nurse carries on. If both nurses are on deliveries, a nurse from a "quiet" district is shifted over to take care of current work. This plan is working satisfactorily.

WHAT THE NURSE DOES

The standing orders for nurses include material under the following headings: (1) Method of calling nurses, (2) policies governing nursing service at delivery, (3) conditions of work, (4) field nursing services, (5) nursing duties on delivery, (6) care of the infant, (7) nursing equipment, (8) care of equipment, and (9) records.

Orders provide among other things that the physician and nurse shall arrive at and leave the patient's home simultaneously. Except in emergency or on special request of the physician, calls are not accepted unless the patient has been admitted to the maternity service. The nurse will demonstrate to some responsible member of the family the care of the mother and infant. Whenever possible, the services of the Red Cross and Metropolitan nurses will be used for subsequent bedside care. Our nurses are permitted to take the blood pressure and to test urine for albumin. Their equipment consists of the regular nursing bag, a delivery bag, maternity pack, loan pack, Tycos, and stethoscope.

REGISTRATION OF CASES

Maternity cases are registered for care in the following manner:

1. Directly by the doctors, either over the telephone or in writing.
2. A doctor may likewise register cases with the nurse in his district, in which event the nurse will in turn register the case in the central office as early as possible. However, the nurse cannot arrange the matter of fees, which must be taken up by the physician himself with the health department.
3. The nurses will frequently come in contact with cases that they think should come under this program. If the case has a physician, the nurse will contact him and ask if he wishes to have it registered. If the case has no physician, it will be urged to select one. When a doctor is selected, the nurse

will report the case to the central office, which will in turn get in touch with the doctor, asking him if he will accept it and if he wishes to register it.

4. Cases can be registered through a clinic. Pregnant women who come into a clinic and have no doctor will be asked to choose one. When this has been done, the same procedure will be followed as in the last paragraph. Only physicians can register cases.

Under no circumstances will health department nurses be present at a delivery on the request of the family only.

To which group a particular case belongs is worked out at the time of registration through reference to the County Welfare Board.

Ill children are handled in much the same way. Also a pediatric clinic is now in operation in Annapolis, conducted by a pediatrician from Baltimore. Cases are referred to this clinic by private physicians and the health officer. The pediatrician examines, diagnoses, and outlines the treatment to be given, but does not give treatment himself.

THE COMMITTEE OF THE COUNTY MEDICAL SOCIETY

From the beginning of the program, the health officer has had the assistance of a special committee of the County Medical Society, which helped construct the standing orders above mentioned and the fee table which follows. On their recommendation, both were approved by the Medical Society. This committee is now a permanent part of the program and will play an important part in its success. Their interest can best be expressed in the words of one of the members at a recent meeting: "This is a good program for which we medical men have a definite responsibility. If it fails, it will not be because we have neglected to give it our support."

THE PROBLEM OF FEES

Because of its importance and the light which it throws on the program, the fee table is given in full.

Delivery Service—For the delivery of cases contacted and reported to the health department before the beginning of the 5th month, and provided the family cannot afford to pay, $25. For the care of such cases, if they abort or miscarry, $15. Part payment arrangements can be made. If a family can pay part, it will be encouraged to do so. Part payments will be used to reduce the amount paid by the health department. The County Welfare Board will be asked to help determine lack of ability to pay.

For prenatal care rendered the above cases and begun before the 5th month—$10, provided care is given in the physician's office and consists of a thorough physical examination, pelvic measurements, blood pressure, Wassermann, urinalysis, height and weight, and that urinalysis, blood pressure, and weight are to be taken at least monthly thereafter. Twice monthly in the 8th and 9th months is recommended. If the physician prefers, prenatal care will be given in one of the prenatal clinics, in which event $5 will be paid to the physician, and he will be kept informed regarding the patient's condition. Under this arrangement, and during the prenatal period, the physician should see the patient at least once in his office, or if he prefers, in the clinic. A postnatal examination is to be made approximately 6 weeks after delivery. At least three visits should be made by the physician to uncomplicated cases during the first 10 days after delivery.

Deliveries in the hospital will be paid for, for the present, on the same basis as above.

Cases registered after the 5th month will at present be paid for as follows: delivery, $20; prenatal care, $5, if given in the physician's office, $2.50 if given in a clinic. Right is reserved eventually to discontinue payments for cases re-

ported after the 5th month. This does not apply to emergencies and probably will not affect nursing service.

For consultation service a local qualified man may be employed at a fee of $5. Also, an additional physician may be employed when necessary to help at a delivery, such as giving an anesthetic, etc., at a fee of $5. An obstetrical consultant was appointed on the staff of the local hospital and is available for consultation service on demand.

A physician should seek consultation under the following circumstances:

1. Placenta previa or premature separation of the placenta
2. Fulminating pre-eclampsia or eclampsia
3. Infected incomplete abortions
4. Labor of over 30 hours
5. Mid-forceps for posterior or transverse occiput presentations
6. All high forceps
7. Podalic version except on a second twin
8. Caesarean sections
9. Severe puerperal infection
10. Destructive operations
11. Shock developing during labor or after delivery
12. Symptoms suggestive of rupture of the uterus.
13. Pregnancy following caesarean section
14. A diagonal conjugate of less than 11 cm

There will be no extra fees for these operations, other than the $5 consultation fee, except after reference to the Medical Committee, who will determine any extra fees to be paid in any particular case, but in no case will more than $50 be paid for any delivery.

Delivery fees will be the same for either hospital or home deliveries, but in order to collect for the latter, the physician must have made use of the health department nursing service.

Delivery fees will be paid on presentation of properly made out and certified bills, presented 6 weeks after delivery and after a postnatal examination has been made, except in circumstances satisfactory to the Medical Committee. In the case of hospital deliveries, a copy of the hospital record will be furnished the health department to file with the department records.

It is understood that health department nurses are to help with those home deliveries for which the health department pays, and are available for those cases, which, while able to pay the doctor, cannot afford nursing service. Requests for this latter service should be made at least 2 months before the expected date of delivery.

Pediatric Service—For visits to children whose family cannot afford to pay a physician, first visit $2, second visit $2, care for the first week $5, provided at least three or more visits have been made. For the second week $5, provided at least three or more visits are made. Fees for cases prolonged past 2 weeks are to be decided on their merits by the Medical Committee. Visits to cases in the hospital should be less because the physician in going to the hospital may be able to see two or three cases at once. Fees quoted are to include mileage.

Operations—Operations will be paid for only after reference to the Medical Committee, but in no case shall a fee for any one case exceed $50. Tonsil operations must be done in the hospital. No fees will be allowed for circumcisions.

The question of who shall be served, in both obstetrical and pediatric cases, will be decided by the health department with the help and advice of the County Welfare Board and the Medical Committee.

It is requested that a pediatrician be appointed on the staff of the hospital as consultant.

MISCELLANEOUS

Records of prenatal and delivery cases, infant and children records, paid for by the health department, shall be made on health department forms.

When requested, a nurse will accompany a physician to visit an ill child.

It is understood that the health officer is a member of the Medical Committee.

The above fee table is tentative and may be revised from time to time with the advice and consent of the Medical Committee, which will in turn submit such revisions to the County Medical Society for its approval.

Our arrangement with the hospital provides that maternity cases will be cared for at the rate of $4.50 per day, and $1.00 per day for the care of the baby. This is a flat rate and includes all charges except unusual or costly medicine. Children are hospitalized at $2.50 per day. Abdominal x-rays of pregnant women cost $3.

THE MIDWIFE PROBLEM

At the beginning of the program, there were many rumbles of dissatisfaction from the midwives for whom no provision is made. A nurse midwife, borrowed from the State Department of Health, undertook to clear this situation with the result that 13 of the 27 midwives whom we had on the list decided to quit practising and turned in their licenses. The others were given special instruction in groups and singly, the nurse midwife helping them with some of their deliveries. They are now asking our nurses to be present at deliveries and to supervise their work. We are planning to appoint a nurse midwife to our staff. While part of her time will be spent in midwife supervision, she will be used primarily in a supervisory capacity to teach and help our nurses with their maternal technic.

RESULTS OF THE PROGRAM

By September 1, the program having been then in operaiton 6 months, we had registered 90 cases for delivery and the nurses had assisted at 49 actual deliveries. Eight other registered cases have been delivered in the hospital. Eleven physicians have made use of this new service. Forty-four children have been given medical service. So far, no serious difficulties have arisen and we do not contemplate that any will arise. The hospital has been slow about making some improvements necessary to our requirements, but there is evidence that they will make them in a short time. Only favorable comments have been received from the doctors and the public generally. Coöperation has increased; the Red Cross, for instance, is doing much of the postnatal bedside nursing.

We have had no trouble in integrating these new services with our original program. All services appear to be increasing in effectiveness, especially child hygiene. For some time, our nurses have been visiting all new infants, but due to delays caused by the machinery of birth registration, from 1 month to 6 weeks sometimes elapsed before the nurse knew about them. Fifty per cent of our infant deaths in 1939 occurred during the first month of life. Relatively few of these were reached before they died. Under the new program, many infants will be taken under supervision immediately at birth. With this, plus good prenatal care, we should be able to reduce neonatal deaths. Through the pediatric service, we have already been able to save the lives of several infants and small children. We will never be able entirely to eliminate maternal deaths. Occasional accidents will happen, but we should be able to reduce them to a minimum and we should be able to reduce postnatal ill health which at present afflicts so many of our women.

One other thing remains to be considered and that is cost. If we expended all of the money available from all sources, approximately $75,000, the health work for all activities including payments to physicians, hospital, etc., would cost about $1.15 per capita, not great when you consider the extent of the services rendered.

A County Health Unit with Proper Functioning Maternal and Child Health Program*

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THE ideals in a proper functioning maternal and child health program embody certain elements, the presence or absence of which affect its success. To list these, not particularly in order of importance, one must include the value of lay teaching, field nursing service with individual teaching of the patient, conferences wherein the patient may seek medical advice and concrete service, provision for medical attendance at delivery, care of the well baby, nurse attendance at delivery, and, last, medical consultation for the rural practitioner whenever he needs it. Such a given program would thus offer continuous care to a patient and eliminate the gaps wherein maternal and fetal mortalities are apt to occur.

Nursing home visiting in itself admits of tremendous merits, but teaching alone does not uncover subtle abnormalities, nor can we expect a field nurse to diagnose them. With regular periodic conferences, her work can be aided by the obstetrician and pediatrician, who in turn offer some medical advice to the patient.

In rural communities such as ours, over 50 per cent of the total population is unable to afford a medical attendant at delivery. This results in total absence of care at a most crucial moment in the entire pregnancy cycle. Often a mother is given service and taught throughout her pregnancy, only to be abandoned and left to her own resources at time of delivery. This is a definite gap. We cannot overlook the maternal deaths due to infection, and those due to hemorrhage or neglect and still say we have a working program.

If any effort is made to help the rural general practitioner in his necessary part in the program, then nurse attendance at delivery is important. Comparatively few rural men have the facilities, the time, and often the ambition to prepare and carry necessary delivery equipment. With housing facilities as they are, few extend themselves to prepare the room or their patients properly. Perhaps criticism here is justified, but it is understandable to those who have tried rural practice without outside help. The presence of a nurse with necessary supplies, to stand by the doctor in his convictions when the family is begging for pituitrin to be given—someone to prepare the room,

* Read before the Maternal and Child Health Section of the American Public Health Association at the Sixty-ninth Annual Meeting in Detroit, Mich., October 8, 1940.

the bed, the patient, to give enemas, and do all of the work he might neglect because of taboos and superstitions—is of invaluable aid. Physicians soon learn to coöperate to the extent of almost demanding such service, often wondering how they did without it in the past.

Should every community be fortunate enough to have an obstetrician and a pediatrician, the problem of care for the rare or complicated cases would be met. This is seldom true of a rural area, and rural practitioners have had little opportunity to progress in the specialties of medicine. With consultation service available to both the physician and the patient when the need is acute, the total health program is complete.

It was along these lines that the program in Cherokee County was finally determined. Naturally the results were not all arrived at overnight and they were not accomplished as simply as this reads; yet in substance the ideals outlined above exist in the program today.

THE COUNTY PROBLEM

Cherokee County is one of five counties included in the Coöperative Health District No. 1 in Northeastern Oklahoma. The total area of 3,388 square miles is situated in the foothills of the Ozark mountains. The population of 92,000 is composed of 73 per cent white, 23 per cent Indian, and 3 per cent colored inhabitants. Only two towns boast a population of 2,000 and none is over 3,500. There are approximately 35 physicians serving this area. Cherokee County comprises one-fifth of the population.

The people themselves are for the most part poor. Housing is an acute problem. Many families with 6 or even 8 to 10 members live in one or two room log huts, often without floors or windows. Their superstitions are a potpourri of the usual run of everyday lore, combined with that of the early pioneers and Indians. Their living habits are relative to their income. Sanitation and water supply needs are frequently acute. If something could be done to better their economic status, progress would be far more rapid in the field of public health. Only too often despite instruction and an appreciation of the needs for betterment by the family, nothing has been done to correct the conditions because of lack of financial backing.

The practising physicians in Cherokee County at the start of the maternity program totaled 6. Of these, 3 were over 65 years of age and only 1 was under 40. One young man has been added during the past 2 years, and 2 older men have practically retired. All but 1 live in the county seat.

With the above conditions present, both with the type of county resident and the roster of rural general practitioners, the stage set was about average for a strictly rural area.

THE MATERNAL AND CHILD HEALTH PROGRAM

To conform with the ideals mentioned previously, the following program is in operation: There are 5 nurses who divide the county into equal areas depending upon school population. Each nurse conducts a generalized program in her district and her records are kept in her individual file. Upon her shoulders rests the responsibility of the care of the families in her given district. She is likewise responsible for the conferences held in her district.

There are 7 maternity conferences conducted in Cherokee County each month (of a total of 19 for the district), one site being used twice a month. Four child health conferences are conducted each month (of a total of 15 for the district), and, again, one site is used twice monthly. These medical conferences are conducted on distinct days. All are permanent. Their location has depended upon the particular case load

and needs of the community as well as the distances which the patients would have to travel. Even then, many travel from 10 to 20 miles in wagons, on horseback, and occasionally crossing the river by boat. In this manner the county area is covered. The conference case load varies between 8 and 30 maternity patients, and the attendance of children is higher.

For the larger conferences an appointment schedule is in force. The time is taken up with the usual nursing conference, display of demonstration material, talks to mothers in groups, visual teaching, and a complete medical examination. This includes, for all prenatal patients, a blood test for syphilis, vaginal smears and cultures if necessary, external pelvic measurements and an internal pelvic examination with correction of uterine displacements and erosions. Much of the time available is spent in teaching the mother the important phases of maternal care.

At the child health conference the infants and preschool children receive a complete medical examination. Immunizations are given for smallpox, typhoid, diphtheria, and whooping cough. Blood tests are obtained on all potential congenital syphilitics. The mother observes demonstration material and is schooled in the field of well baby care, hence parents are encouraged to attend as often as possible. Corrections are advised either by letter to the private physician or through the Crippled Children's Commission.

Physicians are encouraged to utilize these conferences in regard to consultations. Often they accompany the patient. At two monthly maternal and child health conferences the local physician attends and assists.

In Cherokee County, funds are available to purchase medical care for indigents at the time of delivery. These fees are derived through Social Security funds and are on a sliding scale. For delivery alone, a physician receives $15. For delivery and prenatal care during the last 2 months $17.50, after the 5th month and prior to the 8th month, $20, and prior to the 5th month $25. These fees are paid after complete postpartum care has been given though it sometimes requires more than the one 6 weeks' examination to correct obstetric injuries. An added fee of $5 is paid once for travel over 10 miles.

HOW THE PLAN WORKS

To illustrate the plan now in practice, a patient presents herself to one of the maternity medical conferences. She receives a complete examination as outlined. If she states that she will be unable to purchase medical care for delivery, her indigent status is determined by a medical social worker who visits her in her home. Added to her findings are the opinions of the field nurse and physician. Often the social worker can help a family plan their budget properly so that they are able to pay for their own care. Occasionally a family will make efforts to settle previous indebtedness to their physician (which otherwise would deny care due to lack of credit), while the present pregnancy is taken care of by the program. If indigent, the patient makes her choice of physician and is referred to him immediately by letter.

Physicians residing out of Cherokee County may participate providing the patient lives in Cherokee County. When this referral is made, a blank maternity record is sent the physician and he assumes full charge. The patient herself is not seen again at a conference unless sent in for consultation by her doctor, because of some abnormality. Field nursing visits continue and reports are given the physician by the nurse. If a patient is lax in reporting regularly for prenatal care, the physician notifies the department and a home visit is made immediately.

After complete care has been given, including the 6 weeks' postpartum examination, the physician presents the maternity record and a detailed report of the present condition of the patient and if everything is in order a claim is filed for payment.

One of the requisites for fulfillment of the policies of the program is the rule that a nurse be present at delivery. This was necessary in the early life of the program but could easily be dispensed with now, since we are certain to be rebuked should there be no nurse available for delivery. Another rule made it necessary for the physician to employ the wet technic outlined and the standing orders approved by the County Medical Society. This was also done early in the program so as to teach this technic, as it was felt that if mastered when used in indigent cases soon physicians would adopt the good technic with private cases where it was not demanded.

THE USE OF WET TECHNIC IN DELIVERY

To digress one moment, it might be well to stress the use of this wet technic for delivery. So often maternity delivery services employ elaborate sterile packs, sterile linen, and a huge amount of equipment. Well and good, provided the physician who has been taught this technic can carry it on unassisted. This is rarely the case in a rural area. Few men have the facilities to prepare such supplies. Again, they rarely have the help or the time and, though ambitious, would lose the stimulus should they be left alone to employ it unassisted. We employ the simplest technic in keeping with the safety of the patient, hoping that should these men at any time be confronted with a delivery alone, they would be able with the minimum of equipment to effect a clean and sterile delivery. The only sterile supplies carried are the cord ties, pads, sponges, and tracheal catheter. Everything else is sterilized by boiling in the home. Instead of sterile drapes, the field is kept clean by the use of bichloride of mercury and lysol solutions. The physician is never lulled into a false sense of security by sterile linen which seldom stays as such in a home filled with flies. We have yet to record a postpartum infection of note, and this plan has been efficient in practice.

DELIVERY AND POSTNATAL CARE

Two nurses are available for delivery at all times, the calls handled through a central exchange. At the time of delivery the nurse functions under the direction of the physician. He is required to fill all records including the infant record when he examines the new-born. Nursing visits are made on the 3rd, 6th and 10th postpartum day on normal cases, and at the 6th postpartum week. If any abnormality should arise during the postpartum period, the physician is responsible for as many home visits as may be necessary. Both the mother and the baby are examined at the 6th postpartum week. Abnormal or premature babies are immediately visited by the pediatrician.

CONSULTATION SERVICES

The consultation phase of the program is most interesting. Here the local physician is aided in obstetrics and pediatrics when confronted with abnormalities or conditions wherein an added opinion is welcomed. To neglect the physician would defeat the main objectives of a good maternal and child health program. With the utmost use of tact and diplomacy, a consultation reaps its reward. One must first of all have the confidence of the physician. This is won through continual contact. Errors in diagnosis are not well tolerated. One must protect, at all cost, the dignity and reputation of the private physician. Since this consultation service is offered without cost and the

competitive factor is eliminated, the physician has learned to rely upon this type of assistance, and thus many serious accidents have been avoided, to say nothing of the postgraduate teaching accomplished. The number of consultations in the district per month amount to 15 to 20 for each consultant.

Operative deliveries are accomplished in the home. Complete operative equipment is available and, when used by the consultant, an additional nurse is employed. Hospitalization for white patients is possible in Tahlequah. For this the local and only hospital is used. It is a two story home so converted. An average of 10 patients per year are hospitalized, the cost being borne by the local county. Persons having one-half or more Indian blood are hospitalized at the Indian Hospital in Tahlequah.

RESULTS OF THE PROGRAM

In 1937 there were 322 births recorded, with a maternal mortality of 6.2 per 1,000. In 2½ years, over 1,100 mothers have been admitted to service in Cherokee County. It is estimated that last year alone approximately 60 per cent of all the recorded deliveries (485) were attended by physician and nurse in the home. Ten per cent were delivered at the Indian Hospital and 5 per cent at the other local hospital. Thus 354, or 75 per cent of all recorded deliveries, received complete care. Sixty per cent of all patients seen are classified as medically indigent. During the 2½ year period there were 2 maternal deaths, neither of the women having been admitted to service. One, an eclamptic who reached us after 8 hours of convulsions, died in 2 hours, and the other died on her 14th postpartum day of what apparently was a pulmonary embolus.

The time allotted does not permit of detailed discussion of other phases of the program—the school program, lay talks and lay participation, the treatment of syphilis during pregnancy by the local physician, the parasitic survey now being made, the dental service soon to accompany all conferences, tuberculosis control, and the many other elements entering in any public health program which constantly affect maternal and child health. One interesting detail is found in the reorganization of the County Medical Society. It meets monthly with the Indian Hospital staff, and a clinical program is presented. Problems in the county are discussed and didactic papers are presented.

When questioned as to the reaction of the local physicians to our efforts, the answer is found in the County Medical Society where for the past 2 years the director of the Unit has been elected president and your essayist their secretary.

There is something very vivid and real in this type of work with its absorbing interest and its constant reward, in the knowledge that every moment spent is worth while. A recent week-end stands out prominently, since it exemplifies all the aims of this program. From daily calendar notes, I quote:

Saturday: At last the date arrived for Mrs. Y's cesarean section. She is 29 years old and of three term pregnancies, lost three babies, first two by mutilating deliveries from below and the third by cesarean section. She intended to deliver this one at home by midwife. Had she gone to term no doubt the old uterine scar would have ruptured. Operated today, she has a live seven pound baby girl. Both are doing well tonight.

Sunday: Watched Mrs. Mc. last night. She delivered this morning at 6½ months in spite of all efforts to stop labor. Dr. S. was there and we have a live 2½ pound baby, thanks to Dr. G., the pediatrician, and the pulmotor from the fire department. The baby has a chance, using the WPA incubator we use in the home.

Monday: Labor Day. Called at 7:00 A.M. by Dr. S. at Muldrow, 77 miles from here. He diagnosed a placenta praevia in an old multipara. Luckily I brought the

microscope, blood transfusion outfit and typing sera, to say nothing of a nurse. Found a 38 year old mother with an abruptio placenta and dead baby. His hospital is small and poorly equipped. We found a compatible donor and taught Dr. S. how to type blood. He hopes to buy a microscope soon. After eight hours spent with Dr. S. we have a live mother, though the baby was born dead. Seven hundred and fifty cubic centimeters of blood were given her. Dr. S. now requests a conference in his hospital for his patients. On the way home stopped in to see Mrs. Y., the section. Both she and yesterday's premature are doing well. All the happiness in the world can't compare with hers. She finally has a live baby out of four pregnancies. She just lies there and smiles at the world.

And Mrs. Y's smile more than compensates for the many miles driven to the little clinic at Qualls, for after all what is worth more to a maternal and child health program, or to any community than a live mother and a live baby?

Medical and Dental Services for Dependent Children Under Public and Private Child Caring Agencies*

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IN every community there are groups of dependent and neglected children, either with no parents whatever or with parents inadequate to provide them the essentials of normal home life, who require community care and protection. Experience has shown one of the prime essentials for the development of any child is adequate medical and dental care. Accordingly, the community standing *in loco parentis* to these children has the obligation to meet this essential need.

This obligation in different communities, dependent on standards of care and organization, is met in varying ways. The earliest stage was the use of the child's own physician with special blanks to be returned to the agency. This in turn gave way to the volunteer physician serving the agency. However, increased emphasis on higher medical standards and increasing numbers of children have forced the children's agencies in most large communities to replace the volunteer with a salaried physician or to develop a special medical program of its own. Today, most of the major child placing agencies of the country are using the regular outpatient clinics of the hospitals for examinations and for treatment of their children. However, the free hospital dispensaries are primarily geared to care of the sick child rather than the preventive program for the well child needed by a children's agency. The tremendous amount of waiting time in clinics and the inability to secure adequate reports, have caused this arrangement in turn to give way in some cities to a specialized set-up for the child placing services.

Boston pioneered and there was early established in the Boston Dispensary a joint clinic called the "Preventive Clinic" for the children of the Children's Aid Association, the Church Home Society, and the Children's Friend Society. Philadelphia, likewise, has had for a number of years a clinic located in the Children's Hospital financed jointly by the Children's Bureau, the Pennsylvania Children's Aid Society, and the Society for the Prevention of Cruelty to Children, which has rendered medical examination and service to their children. The Buffalo Children's Aid Society for a time operated a medical and psychological clinic in one of their own buildings, later transferring it to the Children's Hospital where special medical and psychiatric services were available.

* Read before the Maternal and Child Health Section of the American Public Health Association at the Sixty-ninth Annual Meeting in Detroit, Mich., October 8, 1940.

However, in all of these pioneering experiments, the services were primarily only given the child placing agencies for placement in foster homes. They were always a private agency service and not community-wide. There has been some question how closely their services integrated into the hospitals with which they were associated.

Cleveland, we believe, has pioneered in the development from two angles—first, the development of a broad community medical program for all children placed outside their own homes and including the bulk of the institutions in this service; second, the development of a public child care service with increasingly more adequate public funds for high grade medical and dental care of children under both public and private auspices, a plan initiated and financed at first under private auspices.

ORGANIZATION OF THE CLEVELAND CHILDREN'S BUREAU CLINIC

The Cleveland Children's Bureau Clinic was organized in July, 1923, as a special department of the dispensary of Lakeside Hospital to afford more ample medical care to dependent children admitted to institutions or placed in foster homes. Provision was made also for dental care at Lakeside Hospital Dispensary and in several of the institutions coöperating with the Children's Bureau. The hospital furnishes the rent, light, heat, telephone, laboratory and consultation services, and the Children's Bureau furnishes the staff, supplies and equipment.

The clinic originally was organized to give medical attention to all dependent children cared for in institutions through the Children's Bureau and all children over 3 years of age cared for in foster homes under the Humane Society. With the development of the Cuyahoga County Child Welfare Board in 1930, children coming under the care of this board also have been serviced through the central clinic. Since May, 1931, the medical service in subsidized homes and the special infant clinic of the Humane Society was absorbed and children under 3 years of age of all three agencies are now examined in a special infant welfare clinic held during the morning. The dental clinic for dependent children has been operating continuously at Lakeside Hospital since January, 1924. The institutional services likewise have been expanded to include many of the newer preventive measures.

SERVICES RENDERED BY THE CLINIC

The activities of the Children's Bureau Clinic may be described as follows:

A. Clinics for Older Children (afternoon)

1. Preliminary physical examinations are given all children placed in institutions, boarding homes, or supervised in their own homes. Further examination when indicated is given in one or more special clinics of the University hospitals. Wassermann, tuberculin, and throat cultures are routine in these cases. Vaginal smears are made on all girls going to institutions and in other cases when indicated. In institutional cases, recommendations are made for the correction or follow-up of any defects found. The institution involved has the responsibility of securing care through their own dispensary relationships or return to the Children's Bureau Clinic for service in that clinic or other departments of the University hospitals. In all other cases than institutional further care is given in the clinic or other departments of the University hospitals, in-patient or out-patient.

2. Routine physical examination on all cases in boarding homes or supervised in own home; 3 months interval on children 15 months to 3 years; 6 months interval on children 3 to 6 years; yearly thereafter except where condition warrants more frequent check-up. Formerly, routine examinations were given every 6 months on all children, but the pressures of the clinic were so great that service had to be reduced to a yearly examination, except where more frequent service was indicated.

3. Care of ambulatory medical cases. Other cases (surgical, gastric, cardiac, etc.) are referred to the various specialized clinics in

the hospital. Thus a single visit of a child will permit not only the initial examination but contact with specialized clinics of the hospital, thus saving time and effort of the case workers. Transportation of workers and children can be centralized and time saved.

4. Study of special cases such as endocrine, etc., in association with the specialized clinics of the University hospitals is of unestimable value. Cases for special study as requested by the Child Guidance Center are cleared. A closer interrelationship of psychiatric and medical clinics would be of much value.

B. The Infant Clinic for Babies under 3 Years (three mornings a week)

1. Preliminary examination including Wassermann and tuberculin tests. Infants are referred to the various health centers for follow-up until 15 months old, unless in need of special feeding or other care. Immunization against diphtheria and smallpox usually performed in health center. In case of illness, infants are referred back to the clinic.

2. Infants and children too sick to come to the clinic are seen by city or private physician. As children are placed all over northern Ohio, care of the children in outlying communities has been developed, one qualified physician being selected in each community to look after all the local children. This has proved much more satisfactory, and affords better medical care than the former method of allowing the foster parents to call their own family physician. Standardized procedures and costs have thus been developed for children in outlying areas without requiring costly transportation into Cleveland. The Medical Director of the clinic has carried a large share in the development of these local units.

3. An evaluation procedure for adoption has been developed. It is of tremendous value to the child placing agencies. A special arrangement has likewise been developed for medical examinations of prospective adoptive parents at the parents' own cost.

C. Dental Services

The Dental Clinic with 15 3 hour periods a week is one of the few dental services available to dependents in the community, and is constantly being urged to extend its services to other than agency children. At the present time it is far overcrowded. Service includes complete mouth examination, simple prophylaxis, and the filling of pits and necessary fissures, extractions when necessary, but cannot provide orthodontia.

D. Services to Institutions Caring for Children

The clinic, through the services of its three physicians, has set standards for institutional medical care of children. Service is offered in the institutions for routine physical examination of all children once or twice yearly, cases being referred to University and other hospitals for remedial defects. There has been developed a series of immunization measures which has been a tremendous factor in preventing quarantine and tying up of the institutions at high cost or for long periods. Immunizations are given twice yearly for diphtheria and scarlet fever, smallpox, etc. Tuberculin tests are repeated and consultation is offered on special cases. In some instances complete medical service is offered, and in others the physicians are available on sick call, while a few institutions have their own adequate medical set-up on a paid basis.

E. Subsidized Boarding Homes

Visits are made twice weekly to agency subsidized boarding homes. These homes provide placement of selected children in need of close supervision, chiefly new-born infants, who are examined weekly. Difficult feeding cases are kept until adjusted and showing satisfactory progress. Other cases are kept for varying periods depending on turnover, etc.

STAFF AND BUDGET

At the present time the staff consists of the following: a medical director and assistant, both men trained in pediatrics, and a woman physician, all part-time; a medical social worker and 2 clerks, full-time. Dental service is provided by 4 part-time dentists. The 1940 budget is approximately $16,200, of which the private agencies, the Children's Bureau, and Humane Society, pay $4,100 each and the public, Cuyahoga County Child Welfare Board, $8,000. The University hospital, in the services it provides, likewise makes a considerable contribution. As the number of children under public care has increased, the effort is constantly being made to increase the proportion from public funds so that they will carry a share proportionate to the ratio of their number of children.

At the present time the private agencies, both from the children's field and the hospital, are carrying too large a share and the public ratio should be increased. Due to the shortage of public funds the increased proportion granted each year has been slowly increasing, but they are not yet bearing their full share. On the other hand, the private group has thus been instrumental in carrying over high grade medical service to the public agency. During the year approximately 3,000 children passed through the older children and the baby medical clinics, and approximately 2,000 were cared for in the dental clinic.

ADMINISTRATION OF THE CHILDREN'S BUREAU CLINICS

The responsibility for the administrative control of the clinic rests in a coöperative committee called "The Administrative Committee." The chairman, since its initiation, has been the Chief of Pediatrics at University Hospitals, on the faculty of the School of Medicine, City Hospital, and with many other community relationships. The vice-chairman has usually been the assistant superintendent of University Hospitals. Other members include the executives of the three children's agencies involved, the chief of Social Service of University Hospitals, the Dean of the Dental School, the executive of the Child Health Association, certain socially minded physicians, and representatives of the Protestant and Catholic institutions. This committee has been responsible for relationships, for the budget, and general administrative control. In recent years a subcommittee called "The Working Committee," has met regularly each month to discuss the actual internal operations. This committee has been composed of two representatives of each of the three placing agencies financing the clinic, the Director of Social Service of the hospital, director of medical social work of the School of Applied Social Sciences, etc. The executive direction of the staff and the responsibility for finances have been carried by the Executive Secretary of the Children's Bureau. Supervision of the medical staff has been under the Chief of Pediatrics of University Hospitals, and the medical social work has been supervised by the Chief of Social Service of the hospital.

ADVANTAGES

The advantages of the centralized set-up have been as follows:

1. There has been developed a community program for children in foster homes and in institutions, which provides continuity of medical service, regardless of the type of care the child needs.
2. It has made available high grade medical service through its relationships with University Hospitals. This has been done at a minimum cost because of the centralized plant and competent direction.
3. It has made available to the child placing agencies a specialized service based on the individual child's needs so that his placement may be adapted in the very best way possible. Time of the children's workers is conserved by the special arrangements possible, securing of the specialized reports, centralization of transportation, etc.
4. It has extended the high medical standards developed by the private agencies to the newly formed public children's agency. The private agencies thus demonstrated a service which has now been made available to public children at low cost.
5. Through the coördination of public and private child care, with a progressive outpatient department of a teaching hospital, an understanding of the point of view and needs of both fields has been made possible, and accordingly better service given to all concerned.

It accordingly has been a demonstration of both community and interagency coöperation serving the best interests of the child and the community.

The Slossfield Health Center*

An Example of Local Medical Service for Mothers and Children Under Public Health Auspices

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THE Slossfield Health Center, an integral part of the Slossfield Community Center in Birmingham, Ala., was opened July 1, 1939, by the Jefferson County Board of Health with the coöperation of other agencies, to provide for Negroes living in a specified area, maternity and child health services, a tuberculosis control program, and diagnostic and therapeutic care to persons with venereal diseases. It is estimated that 50,000 Negroes, approximately half of the Negro population of Birmingham, live within the area served by the center.

The Slossfield Community Center is an outgrowth of the industrial health plan of the American Cast Iron Pipe Company organized 18 years ago to serve the health needs of the workers and their families. About 2 years ago, having become convinced of the advantages of this health plan to the workers and of the great needs of the Negroes in the neighborhood of the plant for similar health and medical service and for educational and recreational opportunities, the president of the company, in coöperation with city and state authorities, developed a plan for a community center which should serve all these needs of the people. To start it off, the city of Birmingham gave a tract of land at the price of moving the city stables. The Works Projects Administration constructed buildings for the health and maternity clinics and for the education and recreation centers; the National Youth Administration provided personnel for the educational and recreational activities; the Jefferson County Board of Health made provision for maternal and child health and venereal disease clinics; the Jefferson County Anti-Tuberculosis Association and its Negro subsidiary, the Birmingham Health Association, made provision for tuberculosis control clinics; the Julius Rosenwald Fund provided funds to equip the health center and to train personnel; the Alabama State Department of Health made available Social Security funds to pay physicians for clinic work and later additional maternal and child health funds to provide staff and equipment for the maternity clinic; the Children's Bureau lent a Negro pediatrician from its staff to be medical director of the health center.

From its inception the health center has been an essential part of a Negro community development in which the people of the neighborhood take pride, and give their support in many practical ways developed through National Youth Administration projects and through other local activities. Financial aid for many "extras" comes from

* Read before the Maternal and Child Health Section of the American Public Health Association at the Sixty-ninth Annual Meeting in Detroit, Mich., October 8, 1940.

LAYOUT OF THE WHOLE COMMUNITY CENTER, WITH THE HEALTH CENTER ON THE LEFT, THE MATERNITY CLINIC IN THE FOREGROUND, THE RECREATION AND EDUCATION BUILDINGS IN THE BACKGROUND AND ON THE RIGHT

a local community chest supported by Negroes of the area.

The health center originally occupied 28 rooms in one building, using them for health and medical education, for clinics of several types, and for maternal and child health conferences. Today it occupies an additional 11 rooms in a second building equipped as a maternity unit, including provision for delivery care and a nursery for care of new-born infants.

CLINIC ACTIVITIES

The clinic activities at Slossfield Health Center follow closely the general outline of purpose defined by the Jefferson County Board of Health; namely, to supply certain medical services; to coördinate the health activities of official and voluntary agencies through coöperative planning; and to develop graduate education and training for practising physicians and health education for members of the community.

In 1937 the area now served by the center had but one clinic period for prenatal service and one for child health each week. A syphilis clinic was opened in January, 1939. The Slossfield Health Center was opened July 1, 1939, and expanded service began. In response to gradual development of demand, the center now provides a total of 21 clinic periods during the week, including those for prenatal care, medical diagnosis, child health, dental care, venereal disease treatment, and tuberculosis. The number of persons

attending the various clinics has increased until recently in a single week it reached nearly 500 persons.

The requirements for admission to the center, as established by the Jefferson County Board of Health, are legal residence and inability to pay for private medical services.

The interview for admission is conducted by the medical social worker and may result in sending the individual to a private physician or in laying the groundwork for effective relationships between the health center and the patient. The medical social worker denies advice to no one, but is always circumspect in determining eligibility for clinic services. Controversy with practising physicians in regard to clinic admissions is almost unknown at Slossfield Health Center.

The medical staff consists of the full-time medical director, who is a pediatrician, 4 senior medical consultants who are white physicians, 8 Negro clinicians paid $5 per 2 hour clinic period (venereal disease or maternal and child health) by the Jefferson County Board of Health. There are, in addition, 1 Negro junior obstetric consultant and 29 other persons, all Negro, who assist in operating the health center. These include a dentist, a medical social worker, a resident supervisory nurse, 6 public health nurses scheduled to assist at clinics as part of their general community services, and a clerk. The rest of the staff are supplied by the Work Projects Administration and the National Youth Administration.

The tuberculosis clinic is operated by the Jefferson County Anti-Tuberculosis Association and the Birmingham Health Association. In addition to the senior consultant in tuberculosis and 2 Negro clinicians, 6 workers are provided for this clinic by the Work Projects Administration.

The medical clinic is diagnostic and serves primarily to discover cases of syphilis. Patients who are found to be non-syphilitic but who need treatment for other conditions are referred elsewhere.

The consultant in pediatrics holds clinic sessions for infant feeding, for pediatric diagnosis, and for immunizations. An average of 30 children are seen by the consultant and the general practitioner at each session.

Because of the unpredictable course of apparently minor ailments in children and for educational purposes, individual appointments are made for sick children. Specific instructions are given for each sick child, or he is referred to the proper source for treatment.

A dentist is in regular attendance 2 hours daily with an added hour on Saturday, the period for children. Children and prenatal patients receive particular attention, and hygiene and prophylaxis are emphasized.

MATERNITY DELIVERY SERVICE

On May 12, 1940, the new maternity delivery service was opened at Slossfield Health Center. The ward has 8 beds for maternity patients; there are also 2 beds for isolated patients, and a nursery for the new-born infants. The maternity service is now the most complete service at the center. It offers prenatal care, delivery at home or in the maternity unit, postnatal care, and—under the supervision of the consultant in pediatrics—care of new-born infants.

The staff of the maternity service is composed of the senior consultant in obstetrics, the junior consultant who has had advanced obstetric training, and 7 nurses. The senior consultant determines and directs all obstetric practice under the general administrative direction of the county health officer. There are 23 Negro physicians in the Birmingham area. Of these, 15 are in active practice and available for serv-

ice at the maternity clinic. Two general practitioners are paid to assist at the prenatal clinics. Of the Negro physicians who are eligible for services, those wishing to participate in the delivery program are scheduled in pairs for home and maternity center deliveries in rotation, and receive instruction and a fee of $10 for each delivery if followed by complete postnatal care.

Physicians may refer their part-pay obstetric patients to the center for prenatal care and receive medical reports for their guidance in delivering the patients in their homes. The public health nursing service directs women to the center as soon as they are known to be pregnant. During a 5 day period in August, 13 new prenatal patients were admitted. Six of these, who came on their own initiative, were less than 4 months pregnant.

In the prenatal services the physicians at the clinic and the nurses, both in the center and during home visits, instruct the expectant mother on health practices, diet, preparations for the delivery, and infant care. Much of this instruction is accomplished by the nurses in demonstrations at prenatal classes held preceding the regular examination.

Prenatal medical examinations are conducted by the obstetric consultant as teacher, the junior consultant, and the general practitioner. About 30 patients are examined at a clinic session. Whether delivery is to be at home or at the maternity center is determined by the senior consultant, primarily on the basis of prenatal medical factors relating, in the main, to the needs of primiparas and apparent complications of multiparas. The senior obstetrician also acts as consultant for all maternity center deliveries, and is on call by the junior consultant obstetrician for home deliveries. The center does not afford facilities for major operative procedure.

The home delivery team includes the junior consultant, the general practitioner assigned to the case, and the nurse assigned to home delivery service.

By August 13, 3 months after the delivery service was opened, 231 patients had been scheduled for delivery through the prenatal service which the delivery service complements. Of these 231 patients, 133 (58 per cent) are scheduled for home delivery, and 82 (35 per cent) for delivery at the maternity center. For the remaining 16 patients, the place of delivery is un-

ARRIVAL OF HOME DELIVERY TEAM

specified, no positive diagnosis has been reached, or delivery is provided for elsewhere.

GRADUATE MEDICAL TRAINING

Slossfield Health Center is unique in that all its services are associated in the idea and practice of extending graduate medical training to Negro physicians. The obstetric training, nowhere else available to them on this scale, is a studious concern of all Negro physicians of Jefferson County and is of real interest to Negro physicians in other places. Dr. Baker, State Health Officer, and Dr. Dowling, Jefferson County Health Officer, envisage the possibility of offering the facilities and teaching program of Slossfield Health Center to all the Negro physicians of Alabama.

The teaching relationship of the 4 senior consultants—in obstetrics, pediatrics, venereal diseases, and tuberculosis—with staff and general practitioners is largely on the basis of direct, individual case instruction. In addition each consultant voluntarily conducts one didactic period a month. Experience in major operative procedures is the only type of obstetric training not offered to our Negro physicians.

During August and September, 1940, the county health officer made available at the center a series of graduate medical lectures and consultations given by the staff of Tulane University Medical School under the sponsorship of the Commonwealth Fund.

All Negro physicians and dentists in the Birmingham area are invited to visit the clinics held at the health center and may attend all its educational programs. It has been possible to conduct the graduate education program without charge to these physicians and dentists.

The response of the Negro physicians to all educational opportunities has been commendable. The offer of the conference room at the health center for the regular monthly meetings of the local Negro medical association has brought all medical meetings of the Negro physicians to the Slossfield Health Center during the past year. Beginning this fall, the Negro dentists will hold their regular meetings there also.

HEALTH EDUCATION

The planned approach to health education in the community is through the efforts of the special staff of the Jefferson County Board of Health and through the Jefferson County Anti-Tuberculosis Association and its subsidiary, the Birmingham Health Association. As a result, Negroes of this area are becoming increasingly aware of ill health in members of the family before disease reaches an advanced stage, and come voluntarily to the health center for advice and treatment before hospitalization becomes necessary.

The Jefferson County and Birmingham City public health nursing departments discover many Negroes who need health advice and direct them to the center, particularly to the prenatal and child health clinics. Their activity in this respect cannot be overemphasized for it has value in educating the individual and in rendering medical service. Patients also come to the center referred by practising physicians, employers, welfare agencies, and medical institutions.

We believe a factor of value to both patient and clinic is the effort to dispel apprehension and establish ease and directness in patient-physician relationship. The way is then prepared for successful health education. The health and medical problems of our patients are frequently much involved with other problems and do not offer themselves to solution by a purely medical formula. The lack of information, misinforma-

tion, poverty, and difficult adjustments which characterize the patients in varying degrees must be visualized by our medical and nursing attendants. The medical social worker does much to bring about an understanding of these factors.

THE FUTURE

The plan for the development of the health center is not yet complete; more clinics need to be added. It is moving forward steadily, however, and is making a place for itself in the life of the community which is of unquestioned value, and which will be measured in terms of health and well-being among the women and children and workers of the area. A considerable part of the success of the health center, however, may be accorded to the fact that it is a unit of service in a broad community development concerned with educational and recreational opportunities as well as health and medical care.

Proposed Method for the Bacteriological Examination of Flat Surfaces*

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THE development of modern sanitation methods in food and dairy plants has emphasized a need for a procedure which would allow the determination of numbers and types of organisms on flat, hard surfaces. Attempts have been made to develop such procedures but the results have not been entirely satisfactory.

Not only in food and dairy production plants has there been a need for a simple bacteriological test for this purpose, but more recently in the field of food dispensing, particularly in different types of eating establishments. In the latter case there has been a growing need for a procedure which could be used to determine quickly the degree of contamination on the surface of eating utensils. A review of the literature has revealed that various modifications of the swabbing technic have been most widely used in the bacteriological examination of eating utensils, and, in the dairy industry, an agar-disc method described by Hammer and Olson [1] has shown considerable promise as a means of determining the contamination of dairy equipment.

Different swabbing technics have been employed in making field tests in eating establishments, but it was felt that a more rapid and simple method was needed for determining the extent of contamination on flat surfaces. Since the swabbing methods require considerable equipment and technically trained personnel, they are not practical for most routine field work.

The Contact Plate—A modification of the agar-disc method proposed by Hammer and Olson [1] has been developed and has been termed the "contact plate" method. The preparation of contact plates is as follows:

1. Clean No. 2 ($3^{7}/_{16}$" in diameter) can covers whose concentric ridges have been flattened, are placed in clean Petri dishes so that the outside or top of the cover faces the bottom of the Petri dish.
2. The Petri dish and tin cover are sterilized in the hot air oven.
3. The sterilized Petri dish is inverted and the bottom of the dish raised by means of a suction cup, such as is used on automobile windshields to hold a heater in place, so that 16–17 ml. of the new standard agar can be pipetted into the tin cover and allowed to spread in an even layer.
4. The contact plates are then stored at a low temperature (below 7.5° C.) to retard drying and with the Petri dish cover up, to decrease the possibility of contamination. For best results these plates should be used within 3 weeks.

Tests with the contact plate on a flat surface are made as follows:

* Read at a Joint Session of the Michigan Association of Sanitarians and the Laboratory, Engineering, and Food and Nutrition Sections of the American Public Health Association at the Sixty-ninth Annual Meeting in Detroit, Mich., October 9, 1940. Approved by the Director of the New York State Agricultural Experiment Station for publication as Journal Paper No. 421, January 3, 1941.

TABLE 1

Counts Obtained by Consecutive Contact Plate Tests on a Selected Area of a Single Dinner Plate

Plate Number	Contact Plate Examinations						Total Counts	Per cent Obtained by First Contact Plate
	I	II	III	IV	V	VI		
1	12	6	14	6	4	4	46	26
2	90	39	16	5	10	10	170	53
3	75	50	20	14	10	13	182	41
4	115	147	25	23	19	12	341	34
5	215	50	25	20	18	12	370	66
6	122	7	8	6	7	7	157	78
7	232	163	8	20	25	15	463	50
8	50	25	30	32	10	24	171	29
9	16	4	14	1	0	0	35	41
10	15	15	10	5	5	5	55	27
11	181	130	92	74	52	..	529	34

1. The upright Petri dish containing the contact plate is placed near the surface to be tested.

2. The top of the Petri dish is removed and the contact plate is removed by means of the suction cup.

3. Examination of the agar surface will reveal the presence of contaminants and the depth of the agar layer, *i.e.*, whether it is above or below the level of the edge of the cover.

4. The contact plate is then placed on the surface to be tested and a slight pressure applied. If the surface of the agar is level or slightly above the edge of the cover, very little pressure is required; if it is below, more pressure should be exerted. However, if too great a pressure is applied, the agar may stick to the tested surface when the tin cover is removed. A contact period of approximately 4 seconds is given.

5. The contact plate is returned to the Petri dish and incubated at 32° C.

6. Whether or not a satisfactory contact has been made with the surface can be determined immediately after making a test by observing the tested area. A visible moist spot gives a good indication of the extent of the surface that has been in close contact with the agar.

RESULTS AND DISCUSSION

Six consecutive contact plates were tested on selected areas of 44 china dinner plates. It was found (Table 1) that approximately 44 per cent of the total number of colonies recovered by the 6 contact plates were picked up in one series of tests by the first contact made. In other words, approximately one-half of the organisms were removed by the first contact.

A similar distribution or pattern of organisms was often found on successive contact plates. This would indicate that some of the organisms on the dinner plates existed as colonies from which a number of cells were probably removed with each contact plate test that was made, or that minute particles of food were present which had numerous organisms on the surfaces. This would indicate also that a larger percentage of organisms was recovered by the first contact plate test than shown by the calculation, since the same colony would frequently contribute to the counts of succeeding tests.

FIGURE 1—Removing contact plate from Petri dish prior to making a test on a dinner plate

About 50 field tests have shown that the contact plate is very useful in obtaining an indication of existing contamination on flat surfaced eating utensils prior to their use in food establishments. The simplicity of the method and the minimum amount of equipment necessary for the procedure have been a great asset in making tests in these establishments during busy periods of serving.

Relation of Counts Obtained by the Contact Plate Method and Various Swabbing Methods—Approximately 250 china plates were tested to compare the contact plate method with a slight modification of the swabbing technic proposed by Fellers, Levine, and Harvey.[2] These workers used a saline solution in the dilution tube and a wooden applicator swab. It was found that the contact plate consistently recovered more organisms from the surface of a plate than did this swab method.

The swabbing method proposed in the New York State Sanitary Code [3] was compared with the contact plate technic. This swabbing method differed from the wooden swab technic in that wire applicators were used in the swabs, a phosphate buffer instead of a saline solution was employed in the dilution tubes, and the dilution tubes containing the swabs were agitated more thoroughly before removing the swab prior to plating an aliquot sample.

It was found that in general the contact plate method recovered more organisms than did a flexible wire swab, testing an equivalent area on the same plate. However, when a stiff wire (63 gauge) swab was employed in testing approximately 40 plates, consistently higher counts were obtained than by the contact plate method (Table 2).

Finding that the stiff wire swab generally recovered more organisms than did the flexible wire swab, 12 tests were made in which the wooden swab method was compared with the stiff wire swab method. It was found (Table 3) that with one exception, more organisms were recovered by the stiff wire swab method.

These experiments indicate that the type of applicator used in the swab, the kind of solution used in the dilution tube, and the extent of shaking the tube before removing a sample are factors warranting consideration when employing a swabbing method for obtaining total counts.

Two possible explanations might account for the consistently higher counts obtained by the stiff wire swab method than by the contact plate method

TABLE 2

Comparison of Counts Obtained on the Same Plate Using the Stiff Wire Swab Method and the Contact Plate Method

Plate Number	Series A		Series B		Series C	
	Wire Swab	Contact Plate	Wire Swab	Contact Plate	Wire Swab	Contact Plate
1	416	115	432	65	248	agar stuck
2	300	101	372	68	100	243
3	280	176	60	21	20	8
4	464	115	160	67	32	7
5	72	5	600	64	148	4
6	388	30	3,860	165	1,712	140
7	84	37	748	too many	196	28
8	1,104	50	3,250	110	112	30
9	1,284	141	2,850	520	408	24
10	344	20	928	500	216	70
11	556	110	96	596	4,220	16
12	...	...	2,080	524	1,336	11
13	...	...	416	50	...	...
14	...	...	6,460	600	...	...
15	...	...	6,000	600	..	...

TABLE 3

Comparison of Petri Plate Counts Obtained from Dinner Plates by the Wooden Swab Method and the Stiff Wire Swab Method

Plate Number	Petri Plate Counts from Equivalent Areas Swabbed			
	Series A		Series B	
	Wooden Swab	Wire Swab	Wooden Swab	Wire Swab
1	69	268	138	867
2	25	116	115	216
3	48	268	spreader	104
4	61	632	47	96
5	420	256	320	too many
6	29	336	500	1,336

(Table 2). First, this type of swab insured a more thorough physical removal of organisms from the swabbed area and, second, the shaking of these swabs in the dilution tubes broke up the clumps of bacteria, resulting in a higher count on subsequent plating than when a contact plate test was made which would show only a single colony for each cell or colony that was touched.

The stiff wire swab method has its place where a total bacterial count is desired and where time and amount of equipment are not the primary factors to be considered. The contact plate method likewise has an important place in sanitary control work. The simplicity and ease with which this latter method can be used in field tests to obtain an indication of the extent of contamination on flat surfaces has been noted on numerous occasions. The speed with which the test can be performed has been of great asset when inspecting flat surfaced dishes in an eating establishment or the equipment in a dairy plant. The contact plate has been found useful in convincing food dispensing operators that the manner in which their dishes are washed has an important bearing on the type and number of organisms remaining on these utensils. Preliminary experiments have also shown the contact plate method to be feasible in determining whether flat surfaced dairy equipment has been cleaned properly.

The substitution of eosin-methylene-blue and Endo's agar for the new standard agar ordinarily used in the contact plate was found effective in differentiating colon organisms encountered on tested surfaces.

SUMMARY

1. A proposed method for studying the bacterial contamination on flat surfaces has been described.

2. The "Contact Plate" method has been compared with various swabbing technics and found to give consistently higher counts than either the wooden swab method or the flexible wire swab method.

3. The stiff wire swab method consistently gave higher counts than did the contact plate method. Possible explanations for this fact are mentioned.

4. The minimum amount of time and equipment required and the ease with which the test can be performed, have shown the contact plate method to be more practical for field tests than any of the swabbing procedures employed.

5. The contact plate method has been found to be a simple and rapid means of determining the efficiency of dishwashing operations on flat surfaced utensils.

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Enforcement of Dishwashing Regulations Applying to Eating and Drinking Establishments*

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TALK to the man on the street about dishwashing and more than likely you will find yourself listening to a tale about his personal experience with greasy spoons and dirty glasses, or his observations of other filthy conditions in some public eating or drinking place. One man writes—" For a long time now I have refrained entirely from patronizing drinking fountains and lunch counters in this state because of the inexcusably filthy way in which eating utensils are washed and dried after use for further servings."

Lawmakers on the lookout to enact something to please the people back home and to accede to that familiar demand " there ought to be a law," have in many instances enacted laws governing the washing and sterilization of eating, drinking, and cooking utensils. In their zeal to see every living organism on dishes or glasses destroyed, health officials have been inclined to recommend what they believe to be " sure kill " methods in the drafting of these laws or in the enactment of regulations, with little regard for practicability which is so important to enforcement.

Our observations indicate that here the matter rests in many but not all communities. Either the health officials recognize that the regulations are practically unenforceable and stop there, or depending upon inspection alone they see that certain equipment is provided and rest in the belief that great things are being accomplished. However, in many instances this belief cannot be substantiated by bacteriological examination of dishes and glasses ready for use. As an example of this, in one city sterilization by hot air for 5 minutes is required. Most operators complied by purchasing a certain type of heat regulated hot air oven. The proposition sounded good. The temperature was maintained at 250° F., and batches of glasses were inserted for 5 minutes' treatment. A test of this sterilizer showed that it took about an hour for a full load of heavy glassware to reach 250° F. When this tray of glasses was removed and another tray of glasses at room temperature was inserted in the preheated sterilizer these glasses reached only body temperature in the 5 minutes prescribed for treatment.

Experience in this and other fields has convinced us that the type of regulation simply prescribing the result to be obtained is more readily enforceable, is considered by operators as being more reasonable, and is more likely to get

* Read at a Joint Session of the Laboratory, Engineering, and Food and Nutrition Sections of the American Public Health Association at the Sixty-ninth Annual Meeting in Detroit, Mich., October 9, 1940.

results than one specifying the method or methods of disinfection that must be used. This is particularly true if compliance is to be determined by laboratory tests.

Ordinances that specify methods are likely to be impractical because of the desire to do a thorough job. The pepole who draft such regulations generally have the adequacy of the treatment foremost in their minds rather than the practical conditions under which such methods are to be applied. For instance, many dishwashing machines which wash and rinse dishes in less than 2 minutes are in use in communities in which the regulations require sterilization of dishes by immersion in hot water for *not less* than 2 minutes.

The results of studies convince us that washing is fully as important as sterilization, for some methods of sterilization fail when applied to utensils having a greasy film, and controls have shown that practically all organisms are mechanically removed by washing in clean water containing a good detergent and rinsing with clean water not necessarily hot. After all, being given the task of freeing a utensil of living organisms, is it not as effective to flush them down the drain as it is to kill them in situ? Using a good detergent, satisfactory results can be obtained by washing utensils in clean water at not over 120° F. and by rinsing them in clean water thermostatically maintained at a temperature of 170° F. or more.

Detergents present an administrative problem if we are to use an educational approach to enforcement. When the inspector advises the use of a good detergent he is immediately going to be asked to give names. Until the inspector is in a position to tell which detergents are satisfactory for hand washing, for machine washing, and for hard or soft water, these products will continue to be sold and purchased largely on a price basis. This means that concerns that make good detergents will sell poorer ones to meet price competition. It is possible to classify detergents by laboratory tests, and we believe that a broad classification such as excellent, good, and poor, or A, B, and C, can be made and published without favoring any one or two products.

All this assumes that the health official chooses to take an educational approach to enforcement. It is also essential that health officials make facts available concerning the use and procurement of simple equipment so necessary for small establishments to have for the proper washing and rinsing of dishes and glasses.

In this as in other fields, enforcement can be made easier and more effective by the judicious use of laboratory tests. An intelligent operator is much more likely to make desired improvements when informed that the dishes or glasses with which he is serving the public show excessive bacteria counts or the presence of coliform organisms than if he is told that the inspector does not like his equipment or the way he is doing things.

Laboratory work is expensive and time consuming, and therefore it must be used where the need is greatest. Fortunately we have developed some simple visual tests that can be applied by the inspector in the field. Such a device as the General Electric grease film viewer can be used to determine whether or not the rims of glasses are reasonably clean. Although the correlation between visible film and excessive bacteria count is not good, most regulations require washing as well as disinfection or sterilization or sanitization, and the film is at least evidence of unsatisfactory washing. For the examination of china for film as evidence of improper washing we are using powdered carbon applied by a camels hair brush or, in other words, the finger print method.

When visual methods indicate that utensils are clean and the method used convinces the inspector that the utensils are being disinfected, little if any laboratory work is necessary. When the evidence shows the utensils to be clean but the inspector feels that the methods used are questionable, the swab rinse method of laboratory examination or other suitable method should be used to determine whether or not bacteria are present in excessive numbers, and whether coliform organisms are present. The results should be used to stimulate more effective processing.

In inaugurating a program of this kind every opportunity should be given operators to improve their methods and to learn what is expected of them. As soon as ample opportunity has been given for education, say 6 months or a year, punitive methods must be used both in fairness to the operators who have willingly complied with the requirements and in the interests of public health. It is suggested that legal actions be based on laboratory findings which generally constitute good evidence of violation.

We are convinced that small fair concessions and other eating and drinking places without running water should be advised to use single service eating and drinking utensils. Of course, single service utensils have a broader field of usefulness than this. Some druggists and others find it more economical to use single service containers than to employ extra help to wash dishes and glasses.

Scoring methods and the use of placards as rewards for compliance have not been too successful according to our observations. This does not necessarily mean that they have no merit. If these methods are utilized they can be materially strengthened by using the reports of laboratory examinations of samples from washed and disinfected utensils as the principal element of the score or as the principal basis for awarding and withdrawing the placard.

When and if we reach the goal of effective enforcement of reasonable regulations requiring properly cleansed dishes in the rank and file of public eating and drinking places, it will be time enough to consider whether or not it is necessary and feasible to try to reach the ideal of surgical sterility.

Minimum Qualifications for Nutritionists in Health Agencies*

IN view of the great advance in the science of nutrition and the realization on the part of public health workers of the important rôle which nutrition of individuals plays in maintaining well-being, there is an increasing need for properly trained workers to carry on programs of nutrition education in the field of public health. The past few years have seen a marked increase in the employment of nutritionists by public health agencies in states, counties, and large municipalities. It is anticipated that many more of these agencies will be desiring nutrition services, thus increasing the demand for qualified, professionally trained nutritionists. For the most part the nutritionist serves as a consultant working through the staffs of all divisions of the health agency that are concerned with nutrition. When a large agency employs a number of nutritionists, the duties of the workers obviously vary widely from those of the supervisor to those of the staff members working under close supervision. At present the most common type of position is that of a consultant who works under the administrative direction of the chief of a major division of the health agency and who is largely responsible for the technical content of her program. The qualifications set forth below apply to that type of position.

These qualifications have been prepared as an aid to: (1) colleges and universities training nutritionists and those arranging public health nutrition curricula, (2) municipal, state, and federal departments of civil service, (3) employers selecting nutritionists, and (4) individuals in guiding their preparation for service in this field. The purpose of this statement of qualifications is to serve as a guide for new appointments, but the importance of additional preparation for those already employed should not be minimized.

I. *Definition*—The nutritionist in a public health agency is a professionally qualified person who directs or carries on a program of activities dealing with the application of the scientific knowledge of nutrition to the prevention of disease and the promotion of positive health. The nutrition program of a health agency is directed toward strengthening the service that the agency is rendering in promoting well-being among groups and individuals in

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* Preliminary Report of the Subcommittee on the Educational Qualifications of Public Health Nutritionists.

This report conforms to a statement of the Joint Committee of the American Home Economics Association and the American Dietetics Association, dated July 20, 1940.

The Committee on Professional Education of the A.P.H.A. publishes this report to permit the members and Fellows of the Association to review it and to offer criticisms and suggestions in the further consideration of the report.

This report, like all other statements of the committee on professional and technical qualifications in public health, is subject to periodic revision in order that it may be kept abreast of the best thought.

the communities through better food practices.

II. *The general functions of the nutritionist in a health agency are*—

A. Participation in organizing and carrying out a program to prevent and control all dietary deficiency diseases and to improve health through promoting the production or selection, proper preparation, and preservation of the foods necessary for an adequate dietary. Such programs frequently call for the coöperation of the nutritionist with workers in medicine, dentistry, nursing, agriculture, extension service, education, and welfare.

B. Preparation and assembling of materials for nutrition education—

1. Technical and semi-technical materials for the use of professional workers on the following subjects: nutrition, food selection, food preparation, food economics, and racial, religious, and regional food customs.

2. Popular educational materials for the lay public on these subjects in the form of booklets and folders, posters and exhibits, news releases and radio broadcasts.

C. Staff education—Participation in the in-service training of physicians, dentists, public health nurses, dental hygienists, school health educators, school lunchroom managers, and social workers in regard to human food needs and ways of meeting these needs within the agricultural resources of the area or the purchasing power of the family, and methods of improving food practices through education.

D. Consultation services—

1. For workers in health or allied agencies in regard to dietary needs of individuals, families, and institutional groups, particularly those in institutions caring for children and the aged.

2. With individual cases referred by professional workers for intensive help in food and nutrition problems.

E. Group instruction of adults and children on food and nutrition in connection with health conferences or with the educational program of the health agencies in schools.

F. Coöperating with other agencies in the community in the preparation of budget standards in relation to local current prices. The particular contribution of the nutritionist is to provide for the nutritive needs of the area being served.

G. Preparation of food market orders at various cost levels but of adequate nutritive value, menu plans, and recipes for families and institutions. Similar services for therapeutic and other special diets recommended by physicians, in accordance with income and racial, religious, or regional food practices of the family.

H. Regional studies and surveys—

1. On cost, availability, and use of foods needed to furnish an adequate dietary, these to be used as guides for setting up nutrition programs.

2. On prevailing food practices in the entire region or on special groups.

3. On the effectiveness of various nutrition programs.

I. Interpretation of the nutrition program to professional workers and to the community.

J. Bringing about closer working relationships between the health agency and other agencies carrying on educational or service programs in nutrition.

III. *Qualifications*—

A. Education — Human nutrition should be the subject of major interest.

1. A baccalaureate degree in home economics (one-quarter of the course credits in home economics) from a college or university with a major in foods and nutrition, or a bachelor's degree in other subjects, such as chemistry, biology, or education, with additional courses in foods, nutrition, and allied subjects equivalent to the requirements for a major in those fields for a bachelor's degree in home economics. The college work should include basic courses in chemistry, including physiological or biochemistry, physiology, bacteriology, economics, sociology, psychology and teaching methods, together with requisite courses in home economics, covering human nutrition, food selection, preparation and marketing, family budgeting and economics, and home management. Introductory courses in public health activities and in community organization and resources are necessary.

2. Satisfactory completion of the equivalent of at least one year of full-time graduate academic credit, chosen in relation to the previously mentioned basic training so as to qualify especially the worker for community nutrition participation in the public health field. This graduate work should include supplementary courses in human nutrition, and should give a working knowledge of the public health program and its administration, health education, community organizations and resources, child development, and social case work. The content and extent of graduate study required will vary according to the type of undergraduate preparation and the interval since such work was completed. Completion of an accredited course in hospital dietetics is a most desirable addition to, but not a substitute for, the graduate work outlined above.

3. Field work in a nutrition program of a health or welfare agency under the supervision of a qualified nutritionist should be provided at either the graduate or the advanced undergraduate level.

B. Experience *—

1. Minimum of 2 years in the following positions:

a. Nutritionist in a health agency

b. Home economics trained worker conducting adult education program in food and nutrition (including extension workers)

c. Home economist in a public or private social welfare agency

or

2. One year in the above (III,B,1) plus 2 years as any of the following:

a. Therapeutic or teaching hospital dietitian

b. Dietition or nutritionist in a food clinic or child development center or a school

c. Teacher of nutrition in a college or normal school

d. Research worker in human nutrition

e. School lunchroom director—provided that person has carried

* Candidate should have had part of training and experience indicated within 4 years of the time of her application.

on a nutrition educational program

C. Personal Qualifications—

1. Physical fitness
2. Executive and organizing ability
3. Ability to gain confidence and coöperation of fellow-workers and public
4. Skill in analysis of situations and in presentation of material.

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Selection, Training, and Supervision of County Sanitarians in West Virginia*

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THE sanitation problems in West Virginia are more acute than in many states, and until the past few years death rates from typhoid fever and associated intestinal diseases have been much higher than the average for the United States Registration Area.

The major environmental sanitation problems in the state result from the chief industrial activity, the mining of bituminous coal. In general, the coal fields are in mountainous regions, and the rugged terrain causes an extremely heavy population to be concentrated in the confines of the narrow valleys. The numerous mining camps, varying in size from 1,000 to 3,000 population are usually without the improvements one would expect in a municipality of the same size. This is reflected in the incidence of certain diseases which are much higher in the mining areas, than in the non-mining areas.

Prior to 1936 only the most pressing local sanitation problems could be attacked due to limitation of personnel in state and local health departments. On January 1, 1936, inadequately staffed full-time health units were operating in 13 of the state's 55 counties. Sanitary inspectors or engineers were employed in 8 of the units, but of the 11 men employed only 2 were qualified through training or experience for the specialized work they were doing. The experience with "sanitary inspectors," "sanitary officers," and "sanitary police" had not been favorable. With an occasional exception, the men employed in local health departments were selected because of political affiliation and were incapable of formulating and carrying out intelligent programs. The inspector's viewpoint was apt to be limited and his advice flavored with lay opinion in direct contradiction to sound public health practice. Too often the direction he received from the health officer was apt to be equally ineffective.

The release of federal funds under Title VI of the Social Security Act and an increased state appropriation for local health work in 1936 meant not only that county health work would be expanded, but that selection, training, and supervision of personnel could be undertaken. It is the purpose of this paper to discuss the procedure that has

* Read before the Engineering Section of the American Public Health Association at the Sixty-ninth Annual Meeting in Detroit, Mich., October 9, 1940.

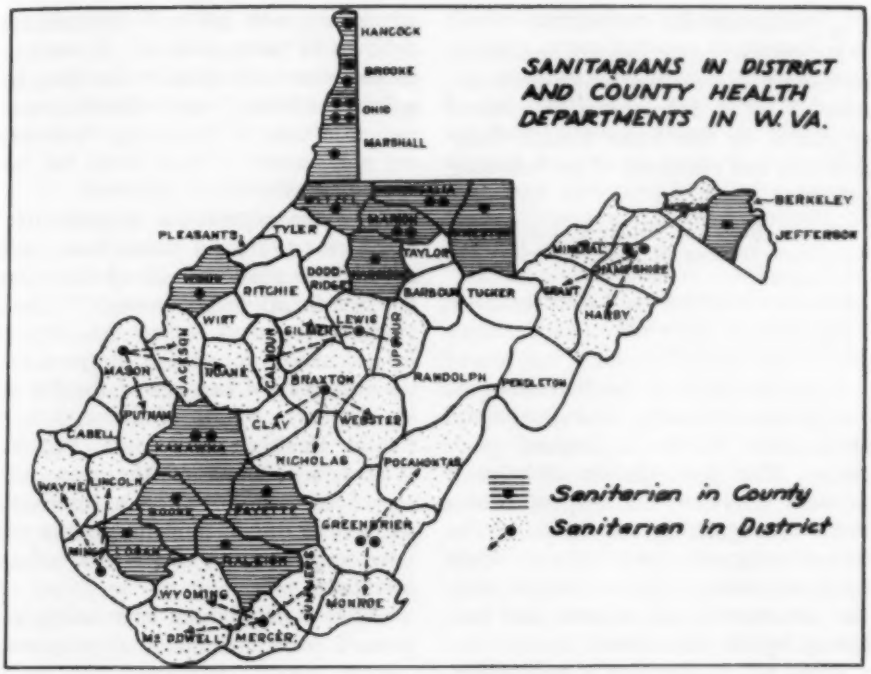

FIGURE 1

been used to insure better trained sanitarians and carefully planned programs in the 22 county and district health units which are serving 42 counties in West Virginia (see Figure 1).

MINIMUM QUALIFICATIONS ESTABLISHED BY REGULATION

The first step to insure qualified personnel in all full-time health units was the adoption by the Public Health Council of a regulation establishing minimum standards for health officers, nurses, sanitary engineers, and sanitarians. The minimum qualifications for sanitary engineers and sanitarians are as follows:

Qualifications for Full-time Sanitary Engineers: A sanitary engineer who is employed to do public health work in West Virginia shall not be over thirty-five years of age if entering this field for the first time. He shall be a graduate of a recognized school of engineering and shall be a registered professional engineer at the time of his employment or shall make application for registration to the State Registration Board at its next succeeding meeting. He shall also have received special instruction in sanitation subjects during his college course or have at least three months postgraduate work in a recognized school of public health approved by the United States Public Health Service. He shall also have a minimum of six weeks' practical training at the West Virginia Public Health Training Center, or its equivalent in field work.

Qualifications for Full-time Sanitarians: A sanitarian who is employed to do public health work in West Virginia shall not be over thirty-five years of age if entering this field for the first time. He shall have successfully completed at least two years of college work, preferably in engineering or biological subjects. He shall also have at least three months theoretical training in a recognized school of public health approved by the United States Public Health Service and a minimum of six weeks' practical training at the West Virginia Public Health Training Center, or its equivalent in field work.

While the two classifications are distinct, hereafter in this paper the term sanitarian shall be used to include members of both groups.

SCHOLARSHIP COMMITTEE

Health officers, sanitarians, and nurses for county and district health units are selected by a Scholarship Committee appointed by the State Health Commissioner and composed of the following persons:

Director, Bureau of County Health Work
Director, Division of Maternal and Child Hygiene
Director, State Hygienic Laboratory
Supervisor of Sanitarians
Supervisor of Nurses

It is the duty of the Supervisor of Sanitarians to receive and investigate applications for the sanitarians' positions. The investigation includes a personal interview, check-up of educational background, and inquiries to former employers and references. Only those applicants who are able to meet the minimum requirements are considered by the committee.

When an appointment is to be made, the committee considers the current applications and selects the names of those best qualified for the available position or positions. These men are then requested to appear before the committee for a personal interview. Following the interview and subsequent discussion, selections are made by the committee. Inasmuch as a majority of the men available thus far have needed special training, selection by the committee has included the granting of a scholarship for such training.

Selection by the committee instead of by an individual has two practical advantages: (1) group judgment is less apt to be in error, and (2) it discourages those who would seek to benefit from political affiliations.

TYPE OF MEN SELECTED

In selecting county and district sanitarians, education and training are not the sole consideration. Personality, physical appearance, and temperament are important, and an effort is made to select men who are not objectionably deficient in these qualities. It has also proved wise to emphasize the disagreeable tasks which may confront a sanitarian, in order to discourage those who are not sincere in their desire for this type of work.

Since the supervision of sanitarians began in 1936, 32 men have been selected for positions—28 of this number were college graduates, 10 were graduate engineers, 7 had B.S. degrees in agriculture, 7 had A.B. degrees, and the remaining 4 had one of the following degrees: B.S. in Medicine, B.S. in Public Health, or B.S. in Physical Education. Three of the men with agricultural training were originally selected as district milk inspectors and later transferred to county sanitarians' positions.

Of the 4 who did not have college degrees, 2 were undergraduate engineers.

TRAINING OF SANITARIANS

The nation-wide expansion of public health work found a lack of trained personnel. Under Title VI of the Social Security Act, provision was made for training of personnel, and special short courses were arranged at universities located at strategic points throughout the United States.

West Virginia is in the area served by the University of North Carolina, and a majority of the sanitarians have attended or will attend a 3 months public health course at that institution.

PUBLIC HEALTH TRAINING CENTER

To supplement the 3 months public health course and to familiarize the health officers, nurses, and sanitarians with practices and procedures in West Virginia, it was deemed advisable to establish a public health training center in conjunction with a county health unit. The training center functions in conjunction with the Monongalia County Health Department at

Morgantown, W. Va. Morgantown is the home of West Virginia University, and coöperation with this institution is of considerable benefit to the training center.

TRAINING SANITARIANS

The trainees are first assigned to an established health department to work with an experienced sanitarian for 1 month. They are then transferred to the training center for a 2 months period. Until recently a 6 weeks course was held, but this has been extended to 2 months.

While a field training center is not the place to conduct classroom work, a certain amount is essential to coördinate the practical work in the brief time allowed. Classroom work amounting to one-fourth of the total time is of the conference type, and didactic lectures are avoided. A similar period is employed for observation, closely coördinated with the lectures. The remaining half of the time is used in field practice under close supervision and on original studies and surveys. A rigid pattern of training is not followed because of the differences in education, experience, and special abilities of the men, but the schedule (Table 1) shows the allotment of work in a course given to sanitarians who have just completed an academic course (3 months) at the University of North Carolina:

It is considered of primary importance that the health officer and nurses conduct certain of the conference and observation activities of the sanitarian trainee, so that a county or district health department can function as an integral unit rather than three separate departments, too often poorly coördinated.

Since the training center is in conjunction with an orthodox county health unit, the field training is practical and permits the inexperienced a brief period of seasoning before going on his own.

Experience has shown that trainees should come in groups not to exceed 2 per field sanitarian. The 2 months

TABLE 1

Distribution of Work in a 6 Weeks Course of Field Training for Sanitarians

	Hours	
Subject	*Conference*	*Field* †
Reports and Records	2	0
Water Supply	8	17
Sewage Disposal	5	19
Sanitary Privies	1	6
Milk and Dairy Inspection	14 *	35
Food Handling Establishment Sanitation	2	18
School Sanitation Inspection	2	7
Swimming Pools and Camps	2	4
Sanitary Survey of a Mine Town	10	49
Public Health Education	2	0
Communicable Diseases	2	0
Industrial Hygiene	2	0
Laboratory Services	2	0
Stream Pollution	2	0
Miscellaneous	2	12
Total	58	167

* The large amount of conference work included in this item is brought about by detailed study of the U.S.P.H.S. Milk Ordinance and Code.

† Includes laboratory work and instruction.

field training course is inadequate, but in the pressure to provide personnel it has served its purpose. Experience has also shown that the training center can and will be valuable in holding special short courses for sanitarians in the field. A 1 week course in laboratory procedure was recently found to be of great value for those sanitarians who had previously completed the regular course of training.

The sanitarian in charge of the trainees at the training center coöperates closely with the Division of Sanitary Engineering of the State Department of Health, and adheres to its policies in his instruction.

PLACEMENT OF PERSONNEL

Following the completion of the field training course, the sanitarians are placed in a county or district health unit. Prior to placement, the supervisor of sanitarians and the sanitarian in charge of training confer in relation to the ability of each individual. An effort is made to fit the individual to the community.

SUPERVISION OF SANITARIANS

The supervision of sanitarians from January 15, 1936, until December 1, 1938, came directly under the Bureau of County Health Work, and the Supervising Engineer was responsible to the Director of that Bureau. This placed a technically trained man out of direct contact with the Division of Sanitary Engineering. While it was possible by frequent conferences to carry on the work in an effective manner, it was apparent that better results could be obtained by transferring all technical aspects of supervision to the Division of Sanitary Engineering, and the change was made on December 1, 1938.

The chief duties of the Supervising Sanitarian, in addition to his service on the scholarship committee, include the placing of sanitation personnel and field supervision. The supervisor makes routine visits to all county and district health departments in the state, and during the past year this has averaged 7 visits to each unit. At the time of each visit aid is given in solving the most difficult problems; the sanitarian is accompanied and observed while on regular work; and office records are checked. Conferences between the supervisor, health officer, and local sanitarian are frequently held to discuss policy, iron out any differences of opinion, or to point out any weakness in the program.

A form for appraising the local sanitarians' activities has been devised and used with considerable success by the supervisor. The appraisal form is based on an assumed standard, and the activity of the sanitarian is compared with this standard. The appraisal is not used to compare one sanitarian with another, but to judge whether or not a balanced program is being followed, and as a check upon the sanitarian's progress. The appraisal has greatly improved record keeping and has discouraged the sanitarians from doing the work they like best to the neglect of other and often more important activities.

Another duty of the supervisor is the development of material for the use of county and district sanitarians. This includes new and revised record and inspection forms, the preparation and development of exhibits, motion pictures, newspaper articles and talks, bulletins, and similar items for education and instruction. Since December, 1936, the supervisor has edited a bimonthly mimeographed publication to stimulate the exchange of ideas among the sanitarians.

It is not in the scope of this paper to describe a typical sanitation program of a county health unit in West Virginia, but it may be appropriate to

point out that the state public health laws and regulations tend to make reasonably uniform programs in all of the local health departments. These laws and regulations have been drafted for practical use and have been printed as a sanitary code in bulletin form. A loose-leaf manual of administration and procedure in county health work has been developed, and by reference to this the sanitarian can note the recommended procedure for most of the situations he will encounter.

The training and supervision of local sanitarians have been of immense help to the Division of Sanitary Engineering, since each local sanitarian considers himself a representative of the central office, and while his technical training and ability may limit the scope of his activities, he can help in quickly solving many local problems. As an example, individual private water and sewer systems for Federal Housing Administration homes built beyond public systems must be approved by the State Health Department. With local sanitarians available for inspections prompt service throughout the state has been possible. As another example, the local sanitarians have made it possible for the Division of Sanitary Engineering to institute an intensive drive to clean up tourist camps throughout the state. With supervision, the local sanitarians can be trusted to understand and follow instructions on problems such as these. These men also refer to the Division of Sanitary Engineering many local sanitation defects which would be overlooked otherwise.

DEFICIENCY OF PROGRAM

The chief shortcoming of the program in West Virginia results from an inadequate salary schedule. While the entrance salary is as high as the usual entrance salary in industry, the advancement that can be promised at this time is not sufficient to prevent the best men from leaving for more remunerative positions. This is particularly true of technical graduates.

It is realized that each county or district sanitarian should have adequate technical training, and the brief training now provided is no substitute for this. The graduate engineer with a degree in public health, public health engineering, sanitary engineering option, etc., is best fitted for this position, although there is a definite place for men lacking such training. It has been noted that the engineer has a tendency to disdain the routine inspection work. The young graduate comes out of school enthusiastic about his technical knowledge only to have his ardor dampened by the very smallness of the problems he must solve. Experience in West Virginia has been that, with close technical supervision, the selected, non-technical graduate who has had some specialized training will hold his own with the engineer in the rural areas because he is more content to do the work, much of which is routine. To take advantage of the engineer's more advanced knowledge and to hold his interest, it is necessary that he be assigned to an urban or industrial area.

A sanitarian must know and be known in his community in order to do effective work. His value during the first year is limited, so it is essential that turnover of personnel be held to a minimum. Except for engineers, the turnover of local sanitarians in West Virginia has not been high. Since 1936, 32 men have been selected, trained, and placed in county or district health units. Of this number, 2 have been removed for the good of the service, 2 have been advanced to the Division of Sanitary Engineering, 1 resigned to return to college, and 4 (all engineers) have resigned to accept other positions. Errors in choice of sanitation personnel have thus far been limited to 2 persons.

CONCLUSION

Since 1936, an effort has been made to coördinate and improve the quality of the sanitation programs in county and district health departments in West Virginia through careful selection, training, placement, and supervision of sanitarians. This effort has been successful to a marked degree.

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THE CARIBBEAN AREA AND TROPICAL HEALTH

IT requires but little imagination to appreciate the delicate international problems that will inevitably arise in connection with Caribbean defense plans. In many instances in this area the United States of America will operate military and naval bases in "foreign" possessions and countries. To the residents of these sovereign powers, however, the military reservations of the United States will constitute the foreign soil and its troops will be the foreigners. Outside of each small base the culture, government, and daily life of each country will continue, and in such circumstances, the North Americans must adjust themselves to the local situation. In these matters we may safely rely upon the genius of the Department of State and upon the common sense and adaptability of the military and naval representatives of the United States.

A smaller, but nevertheless important, element involved in these international relations will be that of the public health, particularly as it relates to the military bases themselves and to the areas immediately surrounding them. Even in continental United States definite problems have been encountered in the areas adjacent to military reservations, because there are involved the health authorities of the military forces on the one hand, and of the local, state, and federal governments on the other. Extent and limitations of these respective authorities, the lack of funds, and the distribution of costs to meet unusual circumstances all enter into the problem. This being the case in the United States, one can easily foresee an accentuation of these problems where the base or cantonment in question is on foreign soil. Quite obviously the authority of the United States Government is sharply limited to the territory which is in its own possession. These areas will not necessarily be situated in localities where health conditions are all that may be desired, and even though the military authorities institute within their own boundaries the most excellent protection of water supplies, excreta disposal, insect control, and epidemiological precautions, the health situation in the camp or base must inevitably be affected by conditions which exist in the surrounding territory. In the Caribbean, this becomes a matter of particular concern because of the tropical environment and the

potential exposure of troops to diseases against which they have acquired no degree of immunity. Fortunately, through the work of the Rockefeller Foundation and the Pan American Sanitary Bureau, excellent relationships have been established with the public health authorities of the Caribbean and South American countries. Students from these areas have pursued graduate studies in public health in the United States, are informed as to continental public health methods, and are most cordially inclined to their colleagues in the United States. These influences should weigh heavily and should be capitalized in this Caribbean health problem, and they offer an opportunity whereby matters impossible of accomplishment through rigid official action may be brought to a happy conclusion by informal voluntary working agreements. It would seem entirely in order, too, to have such working agreements implemented and made practicable of attainment through some of the federal funds appropriated more or less directly in connection with interrelationships between North and South America.

Foresightedness demands not only that there be preparation for meeting in the near future the public health problems created by the Caribbean venture, but also that in continental United States more serious thought be given to health and disease in the tropics. The universities and the medical profession in the United States have not heretofore been active in this connection. A few of the former have attempted to provide courses, largely laboratory in character, but attendance has been slim and incidental to other major interests. Most of those who have received formal academic training in health and diseases of the tropics have had their work in England; many others have acquired expertness in one field or another through experience in the southern part of the United States or in tropical or sub-tropical areas of the world where they have been stationed. There can be no question but that a higher proportion of the medical profession of the United States should be better trained along these lines; and an even higher proportion of career people in public health should be thoroughly grounded in the health problems of the tropics. Practically all the European and Oriental schools of public health are closed or are unavailable, and for this reason as well as for others, training must be provided in the Western Hemisphere. An encouraging element in this connection is the School of Tropical Medicine in Puerto Rico. Here is an excellent institution with a strong faculty, adequately equipped laboratories, and a research hospital. The School has for some years offered a summer course particularly designed to provide instruction to third and fourth year medical students, and has made its facilities available to graduate students interested in special problems.

Problems of extra-cantonment work, particularly as they relate to health in the tropics, offer to every public health worker opportunities in both research and practice. There are fascinating implications in epidemiology; the statistician will encounter problems which will tax his ingenuity; the nutritionist will see stuff he has never before encountered; and the child hygienist will react either with extreme depression or a new burst of energy. There is ample interest and work in these areas for the sanitary engineer, and the administrator will have the opportunity to contribute something and to learn a great deal more. Health education will severely test its old concepts and possibly develop some new procedures. And in all these various lines of endeavor there are active, competent career people locally at work on these problems. With their help and with the opportunities offered, there should be awakened interest and performance in tropical health by those living in continental United States.

COMPLACENCY AND PUBLIC HEALTH PRACTICE

FOR his own comfort the average individual must be reasonably well satisfied with himself: with his knowledge and skill, his height and his weight, his ability to take or leave wine and women, and with the length of his nose. Of course, there will always be a small minority who profess dissatisfaction with what they have done or are. But these are even fewer than they seem, for, if we except psychopaths in the grip of unpardonable sin, most of those who profess self-condemnation make a virtue of it and exhibit an amazing complacency in not being complacent.

For the young man, self-satisfaction is centered on those things which, at that time, are important to him. Regardless of the facts in the case, he is secretly proud of his physical prowess, courage, personal appearance, and casanovistic rôle. Even though he has not yet told the boss where to head in, he nevertheless has a mental picture of such a situation and experiences some part of the glow that would have been his had he actually discomforted the old man. All this is natural and commendable. It indicates ideals and a striving for them, and if the conceit is unfounded in this individual or that, it is so much a personal thing that no important public or professional matters are inhibited or disrupted.

As the years pass the inner demands for self-approbation, as a necessity for fronting the world, change in character. Usually the man of forty-five has made his peace with youthful aspirations and tends more to admire his own intellectual processes and the rightness of the thing he does or does not do in his day's work. Not only this, but because the maintenance of his place in the sun must to a great extent rest upon the group or organization to which he belongs, he is likely to exhibit a complacency in such membership. This is especially true if he occupies a position near the top. For self-protection then, as well as for self-satisfaction, those who have been party to the creation of a system of procedure or who participate in its administration must bind together in mutual admiration if they would accentuate their own glory and confound their competitors and critics. Health agencies are by no means immune to compounding such self-engendered complacency.

Of course, all health organizations need an esprit de corps, and should develop team work and a decent pride in things well done. Without these attributes, steady and sound progress and productive services are impossible. Complacency, however, is quite a different thing, and health agencies may pay a bitter price for accumulating this sort of smugness. It shuts the door to self-analysis and erects a barrier to the acceptance of new practices. It perpetuates dead wood and enlarges the sweep of empty gestures. It may be relied upon to leave undisturbed the sleeping dogs of program deficiencies, and it will never ruffle archaic procedure's shroud. Acting somewhat as an administrative endocrine, complacency will fatten the heads of commissioners and professors and editors, and deepen to belly-tones the pronouncements of bureau chiefs and executive secretaries.

With spring in the air it might be a good plan for us, in public health, to do some house cleaning, or at least to shift the organizational furniture around a bit. Maybe on inspection, some of the worn desk chairs will be found still to be quite sound, in need only of new occupants. Possibly it would be well to sun the mattress upon which we have been taking our administrative repose. Perhaps to get rid of an accumulated dust of ages, once and forever, we need a vacuum

cleaning process rather than the old duster. Certainly the rug of complacency, which has for so long deadened the sound of our false steps, needs an old-fashioned beating.

THE WESTERN BRANCH OF THE ASSOCIATION

THE Western Branch of the American Public Health Association meets this month. From the program and the names of those participating, it will be a most worth while affair. Some of the papers presented will, in due course, find their way into the *Journal,* but the future publication of certain papers is not what we want to talk about. Instead, to those whose work is in central and eastern regions, we should like to emphasize an important fact. It is this: People living in the western part of this continent and in the outlying territories constitute an enterprising citizenry, amazingly independent of binding traditions, alert, and with a faith in the present and future. They are there not by chance, but because they or their fathers or grandfathers wanted to be there. And they are producing fine sons and daughters, with sunshine in their faces, and a spring to their steps. In egregious error, many on the eastern seaboard are inclined to consider playgrounds and playgirls as indices of western culture. Actually, the humid and overscented publicity that sometimes emanates from there no more represents the virile energy of that region than does a capon represent a gamecock.

It is not surprising that out of such a fine background there should have arisen a robust, vital Western Branch of the Association. To a most satisfying extent they have pulled together a large and competent group of workers representing official and voluntary health agencies, with strong members from productive foundations and universities. We shall avoid mentioning names in this connection, because of the danger of unintentional omissions. We shall, however, take this opportunity of expressing to the Western Branch our sympathy in the death of Dr. John L. Pomeroy, who served as their president in 1934. Here was a hard-driving man with a vision. He dared to plunge into untried fields in public health administration. Inevitably he made enemies, and it is possible that some of the things he did might better have been done in other ways, but he built an organization unique in its structure and philosophy, and set a pattern of procedure which may do much to solve in other parts of the country the problem of providing public health services in unusual circumstances.

And so, more power to the Western Branch. We are indebted to that region for many real public health contributions. We do not forget that California established in 1870 the second state board of health in the United States, nor are we unaware of the fine research in sylvatic plague, in tularemia, in Rocky Mountain spotted fever, in typhoid fever, in botulism, in coccidioidal granuloma, in poliomyelitis, in equine encephalomyelitis, psittacosis, and in various other matters, including health education and public health administration. May the coming meeting be even more successful than those of the past.

LETTER TO THE EDITOR

TO THE EDITOR:

The Board of Managers and the staff of the East Harlem Nursing and Health Service, New York City, announce with regret the termination of all activities in the immediate future—the student service will end with the spring semester in May, the services to the community as of June 30, 1941.

It may be recalled that the East Harlem experiment was started in 1923 by a group of local voluntary agencies for the primary purpose of studying nursing and health services in relation to family and community health needs, and that the community project became of more than local professional interest with the inauguration of the Student Service in 1928. It is to the many widely scattered friends of the Service—former staff members, students, visitors, and others—that this notice is addressed.

The decision to terminate the Service was made only after all efforts to secure sufficient new funds to offset diminished foundation support had failed. The Service has never been free to initiate any independent campaign for community support. It has been known locally chiefly by the neighborhood people who are unable to translate their appreciation of, and need for, the Service in tangible terms; by professional workers, students, and visitors. After all possible economies had been effected, the point of the irreducible minimum was reached without insuring a balanced budget. A committee, appointed by the board, left no possible resource unexplored in its search for further funds, and saw no alternative except that the Service, in its present form, be discontinued. As much of the service as is possible will be incorporated into the programs of other health and welfare agencies. The influence of the experiment, we believe, will live on in the practice and philosophy of the many parents, workers, and students who have contributed to its development and have themselves been helped thereby.

The history of the early years of the East Harlem Nursing and Health Service has been told in a series of reports, articles, and monographs printed since 1925. A final report will be available after the Service is closed.

HOMER FOLKS,
Chairman of Board

Credit Lines

A Selective Digest of Diversified Health Interests

D. B. Armstrong, M.D., and John Lentz, M.S.

A question and an answer

An inquiry from "a constant reader" comes to the editors of this section asking if we ever encounter any health education material that is not to our liking. We are reminded that our comments all tend to be complimentary. Hence our correspondent asks point-blank: "Don't you ever come across any material that is poorly done? A few brickbats might prove as helpful as your bouquets."

To this question we can give a point-blank answer: Yes, we do encounter some health education material that is without much merit. But it is primarily the business of "Credit Lines" to be of service to health educators by publicizing accomplishments in the field. Furthermore, we naturally refrain from criticism because we realize that many health educators are faced with tremendous handicaps in producing their printed materials. As a general rule, health educators are hard pressed for time, their budgets are small, the facilities for turning out educational materials are inadequate. Hence, unless we should happen upon some widely used publication containing blatant errors (which is, after all, rare), we prefer to withhold criticism and continue to give our readers comments upon health materials that merit "bouquets," and that may be of value to many not otherwise aware of the existence of such materials.

Please address samples of printed material, comments, or other editorial contributions to the editors at One Madison Avenue, New York, N. Y.

A distinguished report

Although the Rockefeller Foundations *Review for 1940* chronicles unhappy events—the disappearance or decadence of great European institutions of learning and the attendant exilement of brilliant scholars—this annual statement by Raymond B. Fosdick, President of the Foundation, is nonetheless inspiring in that it reveals a determination on the part of this great organization to extend the frontiers of scientific knowledge despite world upheaval. No report is more eagerly awaited each year than this one, and no public health worker should fail to read the 1940 review. Copies will be sent to anyone applying for them, and requests should be directed to the Rockefeller Foundation, New York, N. Y.

Few reports are as brilliantly written as these annual statements and no one who reads Dr. Fosdick's text can refrain from underscoring or otherwise noting certain passages that are distinguished for their beauty and aptness of expression. Take, for instance, those passages of the current report in which Dr. Fosdick reflects upon the relationship of freedom to creative scholarship:

> It is only in an atmosphere of freedom that the lamp of science and learning can be kept alight. In all the history of the race knowledge has never flowered in a subject people. It is only free men who dare to

think, and it is only through free thought that the soul of a people can be kept alive.

Or take the section of the report dealing with the development of the giant cyclotron, in which the author states:

> The new cyclotron is more than in instrument of research. Like the 200 inch telescope it is a mighty symbol, a token of man's hunger for knowledge, an emblem of the undiscourageable search for truth which is the noblest expression of the human spirit.

The various public health and medical activities of the Rockefeller Foundation are surveyed in this 64 page report, but workers in our profession should turn to it not only for accounts of the Foundation's health program; it should be read, too, for the stimulation and encouragement that it conveys, as well as for the beauty, dignity, and clarity of its language.

MEET " DR. JONES "

Those who read *Health News* and those who listen to " The Health Hunters " (a publication and a radio program of the New York State Department of Health) need no introduction to " Dr. Jones." Thousands have made his acquaintance either through his column or through his radio appearances. Dr. Jones deserves a much wider audience than that reached in New York, and Credit Lines is honored to introduce him to those who have not met him heretofore. " Mortimer Jones, M.D." is the way he signs his name.* He is an elderly physician—" a progressive doctor of the old school " —who serves as the health officer of a small mythical community called " Utopia." The column which he writes for *Health News*—entitled " Dr. Jones Says . . ."—has become one of the most popular features of that periodical —so popular in fact that Dr. Jones's essays have now been assembled in book form in response to a demand from his readers.

It is easy to understand why admirers of Dr. Jones desired to have these essays collected and printed in permanent form, for his writing is unique in the field of health education. Dr. Jones's versatility is astounding. He can turn out an essay on practically any subject—be it psychoanalysis or the breeding habits of flies. To " put over " his health messages, he combines homespun philosophy, amusing anecdotes, and sound advice. Perhaps the flavor of Dr. Jones's essays can be in part conveyed by quoting excerpts from them:

> " If somebody shoved me into the ring (which they ain't liable to) and up against Joe Louis, I wouldn't wait for him to sock me. I'd lay down and take the count—and stay there 'til the referee said the fight was over. And I'd do the same with influenza."
>
> " I don't know but it would be a good thing if we'd forget all about death rates and the span of life and all that sort of thing for awhile and devote our attention to seeing that the folks that are living—that are right here now—today—get some satisfaction out of it. Feed the ones that are hungry; the ones that are worried, help 'em with their problems and give 'em a little human sympathy, where they need it, and so on. State of mind, according to my way of thinking, is more important than length of years. If you haven't got happiness you haven't got health."
>
> " Yes, sir; you'd be surprised all the things folks expect the health officer to do: make their landlord turn on more heat; stop somebody's dog from barking; shut off a smell they don't like; take a dead cat out of the road that somebody's run over; in fact, they expect him to be everything from the garbage man and village cop to Santa Claus."
>
> " Plenty of times folks need the doctor's personality more'n they do his pills."
>
> " When you find a problem child—look for a problem parent."
>
> " Specialists and group medicine and so on —they're fine in their place—that is, when they're good—but they'll never take the place of the 'family doctor.' And any system of practice that don't allow for the personal relationship between doctor and patient it won't stand up—not if I'm any judge."

* " Mortimer Jones, M.D." in reality is Dr. Paul B. Brooks of the New York State Health Department.

Copies of "Dr. Jones Says . . ." are available from the State Health Department, Albany, N. Y., without cost. A limited number of these books have been printed and once the news gets around that they may be had for the asking, we predict they will go like hot cakes. Better hurry and ask for your copy!

PICTOGRAPHS—"HANDLE WITH CARE"

Expressing or interpreting statistical data by means of symbolic drawings or pictographs has become a widely used technic among health educators. Indeed this technic has become so popular that pictographs are no longer limited to the interpretation of statistics—they are now used to dramatize facts, ideas, and situations in all types of health education material. That this new technic is frequently misused is the contention of two pictograph experts—Rudolf Modley and Herbert C. Rosenthal. In an article entitled "If You Say It in Pictographs," which appeared in the February-March, 1941, issue of *Channels,* Messrs. Modley and Rosenthal set forth a number of "don'ts" that one should know before attempting to use this medium. The authors specifically state that the amateur artist should proceed with great caution when attempting to use this technic—or else this symbolic picture language may fail completely to convey the thought one seeks to express. The ideal pictograph, according to the authors, is one which "tells its own story and drives home its own message, without benefit of copy." In other words, the pictograph must be so skillfully conceived that it will tell a story in visual terms alone, without the use of words, captions, or text. Remember this the next time you are tempted to illustrate some material by means of "those clever little drawings." If you have access to the issue of *Channels* in which the above mentioned article appears, we advise reading it in full, since the use of pictographs in health publicity is becoming increasingly popular.

USEFUL CATALOGUES

No health agency should be without the following useful catalogues:

1. The government catalogue listing publications relating to health, diseases, drugs, and sanitation. (This is a 97 page booklet which gives the titles and prices of all publications issued by various government agencies on the subjects enumerated. It is available from the Superintendent of Documents, Washington, D. C.)

2. The catalogue of health publications of the American Medical Association. (This publication lists and describes the many and varied health materials published by the A.M.A. In addition to pamphlets on the more popular health topics, this agency also offers health plays, posters, and analyses of present-day medical problems such as socialized medicine, group hospitalization, sickness insurance, etc. The catalogue is available from the American Medical Association, 535 N. Dearborn Street, Chicago, Ill.)

3. The catalogue of the American Dental Association. (This publication lists and describes the dental health educational material prepared and distributed by the A.D.A. Booklets, motion pictures, lantern slides, posters, models, charts, and items designed especially for children are among the materials offered. Copies of this catalogue may be secured by writing the American Dental Association, 212 East Superior Street, Chicago, Ill.)

As one thumbs through these catalogues, he cannot help but be impressed with the wealth of information that may be had from these sources. As long as these agencies continue to function, the health educator need never be without the materials necessary to his work.

CONCERNING SOME HEALTH PUBLICATIONS

The Place of Child Health in a Tuberculosis Program — Prepared by Louise Strachan and published by the National Tuberculosis Association.

This is a splendid handbook which

will be valuable not only to tuberculosis associations, but also to other groups concerned with the conservation and improvement of the health of young people. It is a thorough study of the influences affecting child health. Interested persons will find this handbook helpful from a practical point of view in that it shows how the available resources of the home, the school, and various community organizations may serve to advance child health. It emphasizes the importance of coöperative community planning. Pointers for guidance in parent education, school problems, teacher education, legislation, community group activities, and other fields are listed, with specific examples of coöperation actually existing today in certain communities. Other commendable features of this handbook are the carefully selected list of references and the chart portraying child health as a heart nourished through the home, the school, and the community.

Organization and Administration of School Health Work—By Fred Moore, M.D., and John W. Studebaker. Published by Federal Security Agency, U. S. Office of Education, Washington, D. C. Available from the Superintendent of Documents at *15 cents* a copy.

This monograph represents a constructive effort on the part of the authors to acquaint school administrators with the desired objectives of a well rounded school health program. It points out that, in order to administer a school health program successfully, two requisites are necessary: (1) the school administrator, supported by his board of education, shall be committed to an educational program in the field of health, and (2) the responsibility for this program must be delegated to someone with adequate health knowledge, and with ability to coördinate the teaching personnel and to enlist parent support. The authors have organized their material so that readers may easily follow the various policies and procedures recommended. Anyone concerned with school health work will find this publication helpful and provocative.

Healthful Living through the School Day and in Home and Community—revised edition—By Nina B. Lamkin. Issued by the State Department of Public Health, Santa Fe, N. M. Price, *25 cents*.

The philosophy of health education outlined in the revision of this guide for teachers is that of healthy living throughout the day. It is commendable in that it has been compiled by using the experiences of teachers as basic material and shows particular concern for coöperation between the home, the school, and the community. With new emphasis on 24 hour activities, on pupil participation, and individual development, it illustrates the principle that constant revision of materials is necessary if school health education is to keep abreast of changing educational practices and scientific advancements. However, our knowledge of the way people behave has advanced even beyond what is herein described.

Give the Doctor a Break—By Floyd Burrows, M.D. Published by the Medical Society of the State of New York, 292 Madison Avenue, New York, N. Y. Single copies *10 cents*.

In this booklet, "the little man with the black bag" (the general practitioner) is defended against all advocates of group medical practice. The author states his case in strong language in order that "a befogged and befuddled public may be given a correct point of view regarding the medical profession." Dr. Burrows admits that a certain amount of "medical house cleaning" is needed but he maintains that this is a job that should be left to the doctors rather than to the politicians, social workers, and government

clerks. "Eighty-five per cent of the profession is opposed to group practice, socialized medicine, state medicine, compulsory health insurance, or medicine called by any other name," states Dr. Burrows. We have never read a more vigorous defense in behalf of "the little man with the black bag."

R.S.V.P.

The Social Work Publicity Council (130 East 22nd Street, New York, N.Y.) is bringing up to date their portfolio collection of publicity examples for display at the National Conference of Social Work at Atlantic City, N. J., June 1–7, and the American Public Health Association convention in October.

If you would like your material to be considered, won't you send them two copies of that new letterhead or folder, that annual report, newspaper feature, or radio script which was "the best yet"?

NOTES ON ANNUAL REPORTS

Annual reports of health and welfare agencies continue to reach our desk in an unending stream. Space does not permit comments on each, and consequently we have selected a few reports which, for one reason or another, have that "extra something" that sets them apart and makes them worthy of special reference. Many reports for 1940 were similar in that they were developed around a patriotic or national defense theme. In fact, there were only a few agencies that seemed able to resist the temptation to mount the patriotism bandwagon, a heavily laden vehicle these days.

The national defense theme was especially well carried out in the annual report of the Memphis, Tenn., Department of Health. The authors of this report used the health-defense theme in such an original manner that the "flag waving" element was reduced to a minimum. Entitled "The Ramparts We Watch," this report is nicely arranged, printed, and illustrated. Moreover, it has true educational value for the community which the department serves. Congratulations to the author on the entire report and especially for the page given over to "An American's Health Creed."

The annual report of the executive office of the National Tuberculosis Association is a straightforward account of the association's activities and achievements for the year 1940. The physical appearance of the report is inviting in that the cover combines effective lettering, layout, and use of color. The photographs accompanying the text are excellent. Readers of this report will rejoice in the news that the expected income from the 1940 Christmas Seal Campaign will approach the 6 million mark, the highest in the association's history.

The twenty-sixth annual report of the National Society for the Prevention of Blindness is entitled "Eyes Right!" The cover of this report is an "eye catcher" which shows a group of toy soldiers responding to the command: "Eyes Right!" The outstanding activities of the year are reported in a special section called "Headlines of 1940"—each of which describes the society's sight conservation activities in various fields.

"Working Hands" is the title and theme of the 1940 Annual Report of the Hartford, Conn., Tuberculosis and Health Society. The report shows by means of photographs and text how idle hands become working hands through rehabilitation. This is an exceptional report, reflecting the enthusiasm of the organization's staff for the work that is being done.

Finally, there is the annual report of the Motion Picture Producers and Distributors of America (the Will Hays' office) on our desk. Surprisingly

enough, it touches upon the relationship of the motion picture to public health.

Says Mr. Hays: "In the emergency that faces us today the universal entertainment of the screen is a definite element in national defense. If the movies supplied nothing but relaxation, ours would still be an essential industry. —vitally essential in maintaining public health under the present nervous strains, vitally essential for the rest and recreation that must keep our human machinery up to the needs of speedy and increasing production, and essential also for our mental health."

FRAMINGHAM, MASS., ESTABLISHES A NEW "LOW"

Many readers will remember the Framingham Tuberculosis Demonstration, and that Framingham, Mass., was the site of the first organized effort at community control of a disease by special experiment, an experiment that was the forerunner of many subsequent demonstrations under the auspices of the Commonwealth Fund, the Milbank Memorial Fund, the Red Cross, and other agencies.

The Health Department of Framingham reports a new low record for all time in its tuberculosis mortality in 1940—12.5 per 100,000. This is to be compared with the following previous Framingham records:

1907–1916 (decade average)	121.0
1916	95.5
1923 (when the Demonstration closed)	38.2
1939 (minimum up to that time)	17.6

The Framingham Demonstration was one of the many evidences of far-sighted vision on the part of the late Dr. Lee K. Frankel, and was carried out under the direction of the National Tuberculosis Association, with financial support from the Metropolitan Life Insurance Company.

. . . . . .

Another record worth noting is that having to do with diphtheria control, as reported by the New York State Health Department and the State Charities Aid Association. It is stated that for the more than 13,000,000 people in both New York City and New York State, there were no deaths from diphtheria in January, 1941—the first time this combination of circumstances for the city and the state has prevailed!

BOOKS AND REPORTS

The Parasites of Man in Temperate Climates — *By Thomas W. M. Cameron. Toronto: University of Toronto Press,* 1940. 182 pp. Price, $3.00.

This brief, authoritative presentation of the animal parasites of man is surprisingly satisfying for an introductory guide to the protozoa, helminths, and arthropods parasitizing the human body, in the north temperate zone. Following a very brief introduction each of the three important groups is presented, first in general outline form, then with special reference to the common human forms. Thus, among the protozoa, the amebae, intestinal flagellates, ciliates, trypanosomes, and malaria parasites are presented in sequence; among the helminths, the pinworm, *Ascaris,* whipworm, trichina worm, hookworms, Bancroft's filaria, intestinal flukes, liver flukes and blook flukes, the more important tapeworms, and leeches; among the arthropods, the mites and ticks, mosquitoes and other blood-sucking flies, filth and myiasis-producing flies, lice, fleas, bedbugs and assassin bugs, scorpions, centipedes, spiders, wasps, bees, and ants. In connection with or following each major pathogenic species or group there is a succinct consideration of diagnostic technics and control by medication or preventive measures.

Judged by the space devoted to each, the following parasite diseases are of major importance in the north temperate zone: malaria, oxyuriasis, trichinosis, hookworm infection, fish tapeworm infection, and hydatid disease. For the United States amebiasis should be given more consideration and the tapeworm infections a relatively minor rôle.

The technical terminology is, with very few exceptions, that commonly accepted by the leading medical parasitologists. The information presented is unusually accurate and modern, the style is clear and typographical errors are minimum. The illustrations are original and effective. (It is noted, however, that the life-cycle diagram of *Plasmodium vivax,* p. 21, fails to include the exoerythrocytic phase of the cycle in man.) There is a two page bibliography and a short subject index. The volume is pleasingly printed and modestly bound.

ERNEST CARROLL FAUST

Laboratory Manual for Physicians: Aids in Diagnosis and Treatment *(7th ed.). Albany, N. Y.: Division of Laboratories and Research, State Department of Health,* 1940 103 pp.

This *Manual* is a description of the laboratories of the State Department of Health and the services rendered by them to the physicians of the state. It tells what specimens can be examined to aid in diagnosis and treatment as well as the proper methods of collecting such samples and shipping them to the laboratory. It is divided into seven parts, describing first the organization and operation of the laboratory service, the list of communicable diseases for which examinations are made, and facts concerning the examination of water, sewage, and milk, which includes the study of samples from swimming pools and bathing areas.

The material is all up-to-date and it is practical. In other words, it is a manual describing to the physicians of the state the services offered to them

and explaining how they can be made use of most effectively. There are some 120 local approved laboratories throughout the state for certain types of work which can best be done on the spot, and, during 1939, more than five million examinations were made at these, while the central laboratory and its one branch in New York City made 740,000 examinations, which attests the great work being done for the citizens of the state through the medical and allied professions. MAZŸCK P. RAVENEL

Guide to Library Facilities for National Defense—*Edited by Carl L. Cannon for the Joint Committee on Library Research Facilities for National Emergency (Preliminary Edition). Chicago: American Library Association,* 1940. 235 pp. Price, $1.25.

This compilation is an attempt to list in concise form the resources in United States libraries useful for reference and research service to national defense. The edition is preliminary and tentative. A revised edition is in preparation. It is quite evident that there is need for it, as there are many glaring omissions in subjects and libraries, notably in the health field. The material is arranged under large headings, most of which relate to war industries. Some, however, would be of interest to readers of this *Journal*. Among them are Food Supply, Health, Sanitary Engineering, etc. Under the headings the libraries are arranged by regions of the country and each library has a note describing the collection on that particular subject. An index by more detailed subject, and an alphabetical list of libraries with addresses add to the value of the book. I. L. TOWNER

Perchloron. *Philadelphia: Pennsylvania Salt Manufacturing Co. (1000 Widener Building),* 1941. 32 pp.

Perchloron is a calcium hypochlorite, is used in water purification, for sewage treatment, for swimming pool sanitation, and as a bactericide in the food industry.

This bulletin tells what Perchloron is, its advantages, preparation of Perchloron solutions, feeding Perchloron, and the determination of residual chlorine. A useful booklet for the non-technical person.

ARTHUR P. MILLER

Health Activities and Problems: An Experience Workbook for the Secondary School Student—*By D. Oberteuffer and P. C. Bechtel. Boston: Houghton Mifflin,* 1940. 147 pp. Price, $.60.

This Workbook for the secondary school provides an activity and study outline to be used with several different textbooks and reference books to which references are given in connection with each unit. The Workbook is organized into eighteen units, many of which are divided into several parts or minor topics. Each topic gives an introductory paragraph for orientation, a list of textbook references, and a section on problems and activities. In the last mentioned section, there are opportunities for the student to write definitions and discussions in the Workbook, and there are many suggestions for other activities for the student and for the group. Many of the activities are in the nature of interesting and practical library investigations. Other activities are for field or laboratory investigation. It is inevitable that such activities as "Make cultures of bacteria secured from common objects," and "Demonstrate how bacteria may enter through a break in the skin," will not be practicable for all high school situations. Additional blank space and consistency in the ruling of the existing blank spaces would be helpful.

The Workbook is a careful, constructive, and helpful piece of health education material. C. E. TURNER

Bacteriology in Neuropsychiatry —*By Nicholas Kopeloff. Springfield, Ill.: Thomas,* 1941. 316 pp. Price, $4.50.

The author has attempted to present the rôle played by bacteria and other infectious agents in diseases characterized chiefly by pathology of the nervous system and in diseases in which such manifestations are only of secondary importance. Material of this kind is buried in clinical, immunological and bacteriological literature, and those interested should be grateful to Dr. Kopeloff for compiling this book. However, one wonders if the mere presentation of clinical signs and symptoms which constitute much of Parts I and II will be of any great assistance to either bacteriologist or clinician.

Dr. Kopeloff has recognized the controversial nature of much of the material he presents and has, in certain instances, added critical analyses of the experimental work he reports, analyses which add much to the book. This is particularly true of the section on "Immunology of the Central Nervous System," a field in which the author's own researches have led him. And this section, in the opinion of this reviewer, is the most valuable one in the book, for here is a record of experiments in widely scattered laboratories abroad and at home with a critical evaluation of the data upon which conclusions have been based. LEONA BAUMGARTNER

Back to Self-Reliance—*By Matthew N. Chappell. New York: McGraw-Hill,* 1940. 239 pp. Price, $2.00.

The author is the present director of the Free Personality Clinic, conducted by Christ Church, Central Presbyterian Church, and Central Synagogue of New York City. He is a member of the Department of Psychology of Columbia University.

An earlier publication is *In The Name of Common Sense.*

Dr. Chappell in his author's note informs us—

> . . . this is neither a psychological plea for nor defense of any modern political theory. Nor strictly speaking is it a scientific book. Rather it is based on the clinical experience in the field of human relations, and on the firm convictions that man is not a helpless victim of his environment.

He starts out with the premise that emotional under-development has no inherited basis. Our emotional immaturity is founded on the over-protection we have received in our homes, schools, and more recently under our "paternalistic government." He discusses the WPA project as a natural outgrowth of this trend.

His solution to overcome our dependence is in practising self-reliance. He feels that few people have any idea of their ability to modify their emotions, attitudes, and habits more in line with their own happiness and achievement.

The reviewer questions the advisability of giving a definite set of rules as in chapter VI and VII, which, if followed, will produce happiness for all readers, irrespective of their emotional stability. The danger to readers with limited insight into personality maladjustments is at once apparent.

Many readers will doubtless disagree with the author's contention that movie attendance and the radio are substitutes for individual endeavor. It has been the experience of the reviewer that they contain positive factors as well. These are often the focal points for dissemination of knowledge, and, as such, have educational values to the individual.

He states the function of all great religion is "to foster belief in those principles which lead a man to the fullest use of his own life and powers." He feels that Americans have not made full use of this factor in the development of personality in recent years.

The goal of this book seems to be

to stimulate thought on many subjects of timely interest, and point the way to self-help. The benefits derived from the book will depend entirely upon the background of the reader and his interpretation of the material found.

LELA M. ELLEDGE

Social Work Year Book, 1941: Sixth Issue — *Edited by Russell H. Kurtz. New York: Russell Sage Foundation,* 1941. 793 pp. Price, $3.25.

This description of organized activities in social work and in related fields, prepared with the assistance of an advisory committee of well known leaders and carefully edited, is a valuable source book. The first major section consists of a group of 83 signed articles. It is full of "meat," and written by authorities on the topics discussed. At least 15 of these articles deal with subjects of special interest to public health workers. The section on Public Health is another grade A product of the executive office of the American Public Health Association. Part two is a directory of national and state, governmental and voluntary agencies. Cross references facilitate the use of the volume and also serve to emphasize, as does the entire book, one of the factors in community life—the interrelationships of the various parts of our social structure and of health and social services rendered at the national, state, and local levels. "Prepared under the shadow of a new emergency," the articles naturally "reflect the sudden concern being felt over the state of our national defenses." IRA V. HISCOCK

Notter and Firth's Hygiene—*Revised by L. C. Adam and E. J. Boome (10th ed. rev.). New York: Longmans, Green,* 1940. 518 pp. Price, $3.50.

The first edition of *Notter and Firth's Hygiene* was published in 1894. During the following years editions appeared at intervals up to 1921. From then until the publication of this 10th edition in 1940 no further revisions had been attempted. In view of the great advances in this field during this long period, extensive deletions and additions were necessary in an attempt to bring this work abreast with present knowledge. These revisions have been carried out by L. C. Adam and E. J. Boome of the Public Health Department, London County Council.

In the opinion of the reviewer, this book is of value from the historical standpoint and also as reflecting the current applications of hygiene in the British Commonwealth. It accordingly should appeal to students of sanitation and to all those concerned with the improvement of social conditions. It is not recommended, however, as a textbook, except for reference purposes, for the instruction of medical students in public health and preventive medicine and may not, in fact, have been intended to serve such a purpose.

JOHN C. TORREY

Tuberculosis and Genius — *By Lewis J. Moorman, M.D. Chicago: University of Chicago Press,* 1940. 272 pp. Price, $3.00.

Many men of genius have suffered from tuberculosis—Dr. Moorman gives an impressive list of them, p. xxxii—and the problem whether there is a relationship between a poet's or an artist's tuberculosis and his creations has puzzled many writers. Every serious illness has a profound effect on a man's life. It interrupts his daily routine, and the proximity of death is a stirring experience. This is particularly true in the case of a serious chronic disease like tuberculosis with which a man lives for many years facing death and yet hoping to escape it. The poet and the artist are particularly sensitive individuals, and it is obvious that their

creations must reflect in some way or other the fears and hopes, the emotions and experiences to which the disease subjects them. It is doubtful, however, whether tuberculosis exerts any specific influence on the man of genius. Alcohol and other drugs do, and it has been claimed that the tuberculosis toxin was responsible for the unwarranted optimism—the *spes phthisicorum*—the increased *libido* and the stimulations felt by many patients. This is possible, but Dr. Moorman's book does not make it evident.

After an introduction that states the problem the author pictures the life and work of ten men and women of genius, Stevenson, Schiller, Marie Bashkirtseff, Katherine Mansfield, Voltaire, Molière, Francis Thompson, Shelley, Keats, and Saint Francis of Assisi. The biographies are well written, and they are all extremely moving, particularly the diary of Marie Bashkirtseff. They all tell of heroic struggles, of great creations in spite of the disease. It is impossible, however, to find any pattern in the work of the people discussed. The works of Schiller and Voltaire, of Stevenson and Katherine Mansfield are as different as could be. The disease does not explain the work. And yet there are cases where the relationship is much more apparent. The choice of subjects of a painter like Watteau, the light-hearted scenes that he pictured in his paintings seem to be an attempt to create for himself a world from which he was excluded inexorably by his illness. The disease may also partly explain the enormous productivity of Mozart who, feeling that he was doomed, hurried to express all the emotions that filled his heart.

Dr. Moorman's book will certainly fulfil the purpose stated in his preface. It will give courage and inspiration to the afflicted and will promote tolerance and sympathy for those who suffer.

HENRY E. SIGERIST

Orientation in American Dentistry. Its History and Social-Professional Background. *A Text—Workbook for Dental Students and Professional Health Workers — By Alfred J. Asgis, Sc.B., M.A., D.D.S., Ph.D. New York: Clinical Press,* 1940. 126 pp. Price, $2.50.

Asgis is continuing his pedagogic approach to dental education in the present volume which deals with the history and social-professional background of American dentistry. As a rule the dental student is in his senior year—and frequently not even then—before he begins to realize that he knows nothing of the social and profesional aims, implication, background and promise which his profession holds forth.

The present volume may well be used as a work-book for first year dental students, to familiarize them with dental problems in and outside of the dental school. The student may learn in this book the nature and scope of dentistry as a profession and as a health service, its professional and social problems, its relationship to other health professions and notably to public health and community life. It points out the opportunities in dentistry as a career and as a professional pursuit. The method used by Asgis, while hewing close to a prescribed course of study, nevertheless allows much self-activity on the part of the student and provides practically all of the significant references to the field covered.

J. A. SALZMANN

Diseases Transmitted from Animals to Man—*By Thomas G. Hull (2d ed.). Springfield, Ill.: Thomas,* 1941. 403 pp. Price, $5.50.

The first edition of this book, which appeared in 1930, made a favorable impression and showed the need for a work of this type. The second edition carries further the plans of the first, and brings the material up to date. Six new chapters have been added. Owing to a change in the field of his activities, the

author has called to his assistance 14 persons skilled in their respective fields who have either written or reviewed the various chapters of the book.

The recognition that animals and man are more closely related, as far as their diseases go, than was formerly thought makes this book especially useful. It is well put together. The facts given are well authenticated and the treatment of each subject is sufficiently full. We like particularly the short histories with which the chapters begin.

The one criticism we would make is that the bibliography is not up-to-date in a number of instances, and sometimes an inconclusive paper of the nature of a progress report is given when the final paper should have been quoted. A striking example of this is found in Tables 2 and 3, pages 15 and 16, the first dated 1917 and the second 1922, whereas Griffith in 1938 published a table in the *Proceedings of the Royal Society of Medicine* covering much of the same ground, brought up to date. The result is that the book does not give a fair idea of the amount of pulmonary tuberculosis due to the bovine type of tubercle bacillus found in England and other countries.

The book is well illustrated and is an example of the printer's art for which the publishers are so well known. The book can be highly recommended.

MAZŸCK P. RAVENEL

BOOKS RECEIVED

VITAL STATISTICS OF THE UNITED STATES, 1938. Part 1. Natality and Mortality Data for the United States Tabulated by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, and the Virgin Islands. Washington: U. S. Government Printing Office, 1940. Price, $1.75. Part II. Natality and Mortality Data for the United States Tabulated by Place of Residence. U. S. Government Printing Office, 1940. Price, $1.25.

SEVEN DECADES OF MILK. A HISTORY OF NEW YORK'S DAIRY INDUSTRY. By John J. Dillon. New York: Orange Judd, 1941. 340 pp. Price, $3.00.

APPROVED LABORATORY TECHNIC. By John A. Kolmer and Fred Boerner. 3d ed. New York: D. Appleton-Century, 1941. 921 pp. Price, $8.00.

HUTCHISON'S FOOD AND THE PRINCIPLES OF DIETETICS. Revised by V. H. Mottram and George Graham. 9th ed. Baltimore: Williams & Wilkins, 1940. 648 pp. Price, $6.75.

FIRST AID IN EMERGENCIES. By Eldridge L. Eliason. 10th ed. Philadelphia: Lippincott, 1941. 260 pp. Price, $1.75.

PUBLICATIONS OF THE UNIVERSITY OF PENNSYLVANIA BICENTENNIAL CONFERENCE. Medical Sciences.

Problems and Trends in Psychiatry. By Thomas M. Rivers, *et al.* Price, $.75.

Therapeutic Advances in Psychiatry. By Edward S. Strecker, *et al.* Price, $.50.

Medical Problems of Old Age. By Louis I. Dublin, *et al.* Price, $.50.

Nutrition. Conrad A. Elvehjem, *et al.* Price, $.50.

Female Sex Hormones. By Edward A. Doisy, *et al.* Price, $.50.

The Relation of Diseases in Lower Animals to Human Welfare. By John R. Mohler, *et al.* Price, $.50.

Modern Aspects of the Antituberculosis Program. By J. Burns Amberson. Price, $.50.

Chemotherapy. By E. K. Marshall, Jr., *et al.* Price, $.50.

A Challenger to Scholarship. By W. Mansfield Clark. Price, $.50.

BROADWAY STOMACH. By Joseph F. Montague. New York: Simon & Schuster, 1941. 356 pp. Price, $2.00.

BIOLOGICAL SYMPOSIA. Vol. II. Edited by Jaques Cattell. Lancaster: Jaques Cattell Press, 1941. 270 pp. Price, $2.50.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Despite the Bombs—Brief but reassuring is this note on the public health of England during 1940. Communicable diseases were lower in instance, due—in the Chief Medical Officer's opinion—to dispersal from overcrowded areas. No epidemics were reported from the deep shelters about which we have had such gruesome tales.

ANON. On the State of the Public Health. J. Roy. Inst. Pub. Health & Hyg. 4, 2:58 (Feb.), 1941.

Where Syphilis Is Being Wiped Out—This is the only article that I can recall in which the rate of transmission of syphilis from prostitutes to men, to their wives, and to other prostitutes has been reduced to mathematical formulae replete with Greek symbols and "p" to the "i" power. But don't let the formulae frighten you away from reading the article. It will well repay your study. Regardless of the hypotheses, the paper is one more testimonial to the fact that syphilis can be controlled.

DAHLBERG, G. Venereal Diseases in Sweden, 1913 to 1937. Am. J. Hyg. 33, 2:51 (Mar.), 1941.

Fluorine vs. Dental Caries—If you remember the story of the western towns with water supplies so rich in fluorine that the children had teeth with mottled enamel but very little caries, then you will want to learn what happened after the water supply was changed to a fluorine free water. Yes, the latest crop of youngsters are enjoying a greatly increased incidence of caries, but there are many more findings which should not be missed.

DEAN, H. T., *et al.* Domestic Water and Dental Caries. Pub. Health Rep. 56, 9:365 (Feb. 28), 1941.

From the London School of Hygiene—Sulfathiazole in powdered form snuffed frequently may prove a useful prophylactic against bacterial infections of the upper respiratory tract. It isn't likely that it will be of effect upon common colds. The authors apologize for presenting this speculation upon so little evidence, but in England there seems to be ample excuse for hurried research.

DELAFIELD, M. E., *et al.* Antiseptic Snuffs. Brit. M. J. No. 4178 (Feb. 1), 1941

And Now the Public Health Engineers—Sanitation workers have less public health training than either the physicians or nurses, already reported upon in this series. There has been some improvement in the recent employees except in city health departments where the youngest are the poorest trained. Tenure in the sanitary services is longer than any other. Reassuring, isn't it?

DERRYBERRY, M. Qualifications of Professional Public Health Personnel. Pub. Health Rep. 56, 8:311 (Feb. 21), 1941.

Medical Education—If properly presented, about 100 hours of instruction in vital statistics, environmental sanitation, and epidemiology should be enough to give the medical student an understanding of the science of public hygiene to the end that he will collaborate effectively with the health authorities.

EMERSON, H. Purpose, Content, and Methods of Teaching Public Health to Medical Students. J.A.M.A. 116, 11:1040 (Mar. 15), 1941.

More Evidence re Tonsils and Polio — In the Toronto poliomyelitis epidemic of 1937, the bulbar form of the disease appeared more often among the young children who had been tonsillectomized than among those whose tonsils remained intact.

FISCHER, A. R., *et al.* Relation of Tonsillectomy and of Adenoidectomy to the Incidence of Poliomyelitis. Am. J. Dis. Child. 61, 2:305 (Feb.), 1941.

Plain Words about TB Needs—It is doubtful that the formal antituberculosis measures already undertaken have been the chief cause for the decline in tuberculosis incidence that has so far occurred, but it is quite possible that an adequate program might finish the job. The measures needed to find and control the effective number of spreaders of tuberculosis are enumerated in a way which should goad administrators into action.

GODFREY, E. S. Epidemiology of Tuberculosis. Am. Rev. Tuberc. 18, 1:1 (Jan.), 1941.

Ultra-Violet Lighting for Germs—In an infants' ward the cross-infection rate of respiratory diseases was 12.5 per cent. In a comparable ward in which each cubicle was protected by a screen of ultra-violet radiation, the cross-infection rate was 2.7 per cent. Further good results are reported in the second paper named below.

DEL MUNDO, F., and MCKHANN, C. F. Effect of Ultra-Violet Irradiation of Air on Incidence of Infections in an Infants' Hospital, (and)

GREENE, D., *et al.* Effect of Irradiation of the Air in a Ward on the Incidence of Infections of the Respiratory Tract. Am. J. Dis. Child. 61 2:213 (Feb.), 1941.

Progress against Flu — Discovery of several strains of influenza virus has appreciably dampened the hopes of health workers intent upon immunization against the disease. Recent studies, and those reported, suggest that in the mouse, at least, good stiff doses of vaccine produce immunity in a very high degree both to homologous and heterologous strains.

HARE, R. Active Immunity to Influenza Virus in the Mouse. J. Immunol. 40, 3:267 (Mar.), 1941.

For All to Ponder—Man seems to be incurably afflicted with the desire to get, by artificial means, more pleasure from life than it normally gives him. He likes to escape unpleasantness and to act childishly without being too aware of it. Alcohol is the least harmful of the drugs by which he can achieve these results. This sane observation of the undoubted truth is sandwiched between a brief consideration of the evidences of our national alcoholism and a survey of our inadequate attempts to deal with the problem. It makes a "must" on your reading list.

KOLB, L. Alcoholism and Public Health. Pub. Health Rep. 56, 11:485 (Mar. 14), 1941.

Nursery Dangers—Two epidemics of diarrhea among new-born infants may have been caused by contaminated nursing nipples or formulae. No other cause could be discovered, and bacteriologic examination of nipples and formulae as prepared showed that satisfactorily low counts could not be assured by the methods employed. This warning would seem to be important to those in charge of similar infant caring institutions.

LEMBCKE, P. A. Imperfect Sterilization of Nursing Nipples and Formulas as a Possible Factor in Transmission of Epidemic Diarrhea of the New-born. Am. J. Hyg. 33, 2:42 (Mar.), 1941.

Preventive Dentistry—Three types of school dental hygiene programs worked out in cities of varying levels from affluence to poverty are described. All have this in common: they demonstrate that as the amount of hygienic education increased the cost of correction decreased. All programs were modest in scale.

MORREY, L. W. School Programs for Dental Health. Pub. Health Nurs. 33, 3:157 (Mar.), 1941.

"Patient, Hardworking, Imaginative, Generous"—All of us will be thrilled by this brief but intensely absorbing account of the more recent researches of the late Hans Zinsser upon typhus fever and other rickettsiae.

OLITSKY, P. K. Hans Zinsser and His Studies on Typhus Fever. J.A.M.A. 116, 10:907 (Mar. 8), 1941.

Health in Industry—Fourteen excellent papers on industrial hygiene that were read at the third annual conference on industrial health will be of interest to many sanitarians. Of particular moment to most of us will be those on acute respiratory diseases, visual efficiency, air conditioning, and aging as an industrial problem.

PIERSOL, G. M., *et al.* Acute Respiratory Diseases (and 13 other papers). J.A.M.A. 116, 13:1339 (Mar. 29), 1941.

Sic Transit Gloria Tuberculin Testing—In brief, these are the conclusions of the completely reported Chicago experience: routine skin testing in elementary school age groups is unproductive; considering the expenditure its educational values are problematical; the value of the tuberculin test as a morbidity index is open to question; and its value as a case finding screen has been overemphasized. Miniature x-ray photography of susceptible adult and adolescent groups is a more effective public health instrument. Under the same title a summary of the work is reported as noted below. It cost $450 to find each case by the examination of school children. In 2 months' use of the portable unit in high incidence neighborhoods, 331 new cases were found.

TICE, F. Tuberculin Testing in the Chicago Schools. Bull. Chicago Munic. Tuberc. San. 18, 1:7 (Mar.), 1941; (also) Am. Rev. Tuberc. 18, 1:96 (Jan.), 1941.

About Motion Pictures — Selling public interest in and support for the municipal water supply via the color motion picture is ably discussed in a paper which might well be read by health workers concerned with other branches of the public health service.

WEIR, W. V. How To Make a Motion Picture of the Water Works. J. Am. Water Works A. 33, 2:201 (Feb.), 1941.

Guide to Children's Progress—Physical fitness from infancy to maturity may be plotted upon an ingenious grid which will supply objective ratings on body build, developmental level, nutritional status, maturation, basal heat production, and daily caloric intake, simply by recording the height and weight of each age level.

WETZEL, N. C. Physical Fitness in Terms of Physique, Developmental and Basal Metabolism. J.A.M.A. 116, 12:1187 (Mar. 22), 1941.

ASSOCIATION NEWS

SEVENTIETH ANNUAL MEETING
ATLANTIC CITY, N. J., OCTOBER 14–17, 1941

HEADQUARTERS
Convention Hall

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

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George A. Dame, M.D., Fernandina, Fla., Director, Nassau County Health Dept.

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Maternal and Child Health Section

Jean P. Egbert, R.N., B.S., 1022 Pearl St., Denver, Colo., Child Health Consultant, State Div. of Public Health Nursing

Helen M. Johnson, M.D., 668 Phelan Bldg., San Francisco, Calif., Medical Director, Cardiac Program, Crippled Children's Services

Marjorie K. Smith, M.D., 1006 E. 11th St., Helena, Mont., Asst. Director, Div. of Maternal and Child Health, State Board of Health

Annie S. Veech, M.D., 2519 Cherokee Parkway, Louisville, Ky., Director, Bureau of Maternal and Child Health, Dept. of Public Health

Public Health Education Section

James E. Bryan, Ph.B., 171 East Post Road, White Plains, N. Y., Executive Secretary, County of Westchester Medical Society

T. Ione Diggs, A.B., 800 Hayes, Norfolk, Va., Public Educator and Supervisor, Norfolk Public Clinic

Herbert H. Gross, Ph.D., M.A., Concordia Teachers College, River Forest, Ill., Instructor

Barbara E. Kilduff, A.B., M.P.H., 122 Newton Terrace, Waterbury, Conn., Student, Yale Univ.

Shirley Kopelman, 34–30 73rd St., Jackson Heights, L. I., N. Y., Student, Yale Univ.

Arthur E. Morgan, D.Sc., 114 East Whiteman St, Yellow Springs, Ohio, President, Community Service, Inc.

Emmanuel F. Salerno, M.D., 703 Corondelet St., New Orleans, La., Medical Director, Orleans Parish School Board

Edmund P. Wells, A.B., P. O. Box 341, Charleston, W. Va., Acting Executive Secretary, West Virginia Tuberculosis and Health Assn.

Morris S. Wortman, M.S., 507 S. Euclid Ave., St. Louis, Mo., Research Asst., Washington Univ. Clinics and State Health Dept.

Public Health Nursing Section

A. Pearl Barclay, R.N., 519 Dexter Ave., Montgomery, Ala., Associate in Nursing, State Health Dept.

Margaret Denham, M.A., R.N., 4203 Smithdeal Ave., Richmond, Va., Advisory Nurse, State Health Dept.

Emma M. Kuehlthau, B.S., R.N., 4497 Pershing Ave., St. Louis, Mo., Educational Director, Visiting Nurse Assn.

Margaret J. Lynch, B.S., R.N., Greenwich Lodge, Greenwich, Conn., Executive Director, Visiting Nurse Assn. of Stamford, Conn., Inc.

Amelia M. Meyersieck, R.N., B.S., 295 Golden Hill St., Bridgeport, Conn., Director, Visiting Nurse Assn. of Bridgeport

Edna Knapp Odin, R.N., A.B., 128½ N. New Hampshire Ave., Los Angeles, Calif., Nurse Inspector, Los Angeles City School Dept.

Astrid C. Peterson, R.N., Room 402, Court House, Minneapolis, Minn., Director, Hennepin County Public Health Nursing Service

Epidemiology Section

Morris N. Davidow, M.D., 5 Elm Hill Ave., Roxbury, Mass., Medical Inspector, Boston Health Dept.

J. Ancheng Miao, M.D., 30 Fenwood Road, Boston, Mass., Commissioner of Health, Yunnan Provincial Health Administration

Unaffiliated

West J. Altenburg, M.A., Ph.D., 91 Gladstone, Detroit, Mich., Head, Dept. of Health Education, Board of Education

John L. Barnhart, M.S., Ph.D., 124 Orchard Lane, Stillwater, Okla., Asst. Professor of Dairy Manufacturing, Oklahoma Agricultural and Mechanical College

Stanley K. Bernard, State Board of Health, Columbia, S. C., Field Agent, Div. of Venereal Disease Control

Clifford T. Billingsley, D.M.D., Board of Health Parliament Bldgs., Victoria, B. C., Canada, Director of Preventive Dentistry

David Frost, M.D., 121 Park Drive, Boston, Mass., Student, Harvard School of Public Health

Albert S. Irving, M.D., Medical Arts Bldg., Galveston, Tex., Medical Director, American National Insurance Co.

Kathel B. Kerr, M.S., Sc.D., U. S. Marine Hospital, Bldg. 19, San Francisco, Calif., Zoölogist, State Dept. of Public Health

C. B. Lien, 4353 N. Avondale Ave., Chicago, Ill., President, Lien Chemical Co.

Milton I. Roemer, M.D., 591 E. 27th St., Paterson, N. J., Hospital Intern

DECEASED MEMBERS

D. L. Cowden, M.D., Cambridge, Ohio, Elected Member 1920

John B. Hawley, Sc.D., Fort Worth, Tex., Elected Member 1925, Elected Fellow 1938

George H. Hazlehurst, Montgomery, Ala., Elected Member 1913, Elected Fellow 1922

J. L. Pomeroy, M.D., Los Angeles, Calif., Elected Member 1915, Elected Fellow 1925

Peter O. Shea, M.D., Worcester, Mass., Elected Member 1928

William H. Walsh, M.D., Chicago, Ill., Elected Member 1930

Mary H. Westfall, D.D.S., Indianapolis, Ind., Elected Member 1934

Jessamine S. Whitney, New York, N. Y., Elected Member 1907, Elected Fellow 1933

CORRECTION

AN error exists in the annual report of the Committee on Professional Education on Public Health Degrees and Certificates Granted in the United States and Canada During the Academic Year 1939–1940, published in the December, 1940, issue of the *Journal*. On page 1457 reference is made to the University of California, and it is stated that graduate courses were discontinued a year ago. Attention is called to the fact that graduate degrees in public health have been offered under the Department of Hygiene, University of California at Berkeley for several years and are still being offered.

HEALTH CONSERVATION CONTESTS

WINNERS IN THE 12TH ANNUAL CITY HEALTH CONSERVATION CONTEST

Baltimore, Md.
Evanston, Ill.
Greenwich, Conn.
Hackensack, N. J.
Hartford, Conn.
Honolulu, Hawaii
Madison, Wis.
Memphis, Tenn.
Newton, Mass.
Pasadena, Calif.

WINNERS IN THE 7TH ANNUAL RURAL HEALTH CONSERVATION CONTEST

Northeastern Division

Alcona - Iosco - Ogemaw - Oscoda Counties, Mich.
Alger-Schoolcraft Counties, Mich.

Eastern Division

Arlington County, Va.
Davidson County, Tenn.
Fayette County, Ky.
Forsyth County, N. C.

Southeastern Division

Coahoma County, Miss.
Lauderdale County, Miss.
Pickens County, Ala.
Pike County, Miss.

South Central Division

El Paso County, Tex.
Tyler-Smith County, Tex.

Western Division

Thurston County, Wash.
Wasco County, Ore.

WINNERS IN THE SPECIAL CONTESTS

For the most effective Tuberculosis Control programs:

Hartford, Conn.
Newton, Mass.

For the most effective Syphilis Control programs:

Chicago, Ill.
Louisville, Ky.
Memphis, Tenn.
Pasadena, Calif.

These contests are conducted annually by the Chamber of Commerce of the United States with the coöperation of the American Public Health Association. The Rural Health Conservation Contest is financed by the W. K. Kellogg Foundation, and the City Health Conservation Contest and the Special Contests were financed in 1940 by the Metropolitan Life Insurance Company.

EMPLOYMENT SERVICE

The Association Employment Service seeks to bring to the attention of appointing officers the names of qualified public health personnel and to act as a clearinghouse on employment. This is a service of the Association conducted without expense to employer or employee.

From the registry of persons available, selected announcements are published from time to time. Appointing officers may obtain lists of all registrants on request.

Positions Available

Sanitary Chemist for sewage laboratory in Eastern city. Salary $2,000. Graduate preferred. Write Box V, Employment Service, A.P.H.A.

Bacteriologist. Alexandria, Va., City Department of Health. Milk, water, serological and general examinations. Salary $1,200 to $1,800 according to training and experience. Apply to W. A. Browne, M.D., Health Officer.

Physician with public health training to serve as full-time county health officer in rural South Atlantic area. Salary $3,600 to $4,000. Write Box C, Employment Service, A.P.H.A.

Public Health Nurse. General nurse for Alexandria, Va., City Health Department. Must be a graduate of an accredited hospital with special training and experience in public health. Salary $1,620 to $1,800 according to qualifications. Apply to W. A. Browne, M.D., Health Officer.

County Public Health Nurses for New Mexico. Must have 4 months postgraduate instruction under one of the recognized public health nursing courses and one year's experience. Must drive and have a car. Address inquiry to State Health Department, Santa Fe, New Mexico.

Director of County Health Unit, large southern metropolitan area over 200,000, duties to include the direction of complete generalized program. Applicant must have M.D., M.P.H., with satisfactory experience in administration and technical phase of public health work. Salary dependent upon experience and training. Opportunity for advancement assured. Box W, A.P.H.A.

U. S. CIVIL SERVICE COMMISSION

The Commission has announced that applications will be received for positions as Senior Medical Officer ($4,600), Medical Officer ($3,800) and Associate Medical Officer ($3,200), for appointments in the Public Health Service, with the Food and Drug Administration, Veteran's Administration, and the Indian Service. Forms for application may be obtained from the U. S. Civil Service Commission, Washington.

The Commission also announces that applications may be filed for the positions of Public Health Nurse ($2,000) and Graduate Nurse, general staff duty ($1,800) in the Indian Field Service, including Alaska. Forms may be obtained from the U. S. Civil Service Commission, Washington.

Positions Wanted

ADMINISTRATIVE

Physician, aged 44, graduate of Rush Medical, completing work at Johns Hopkins for M.P.H. and experienced as director of rural unit, will consider opening. **A480**

Physician, aged 39, excellent graduate training and experience in public health, specialized in tuberculosis and epidemiology, now employed, will consider position with salary of $4,500 or better. **A473**

Experienced physician, graduate University of Illinois, M.P.H. Johns Hopkins 1940, seeks administrative opening suitable to his proven ability. Excellent references. **A466**

Physician with M.P.H. from Johns Hopkins and 10 years' field experience in responsible position with leading state health department, will consider good opening. **A481**

Physician, aged 38, M.P.H. Harvard 1932, experienced as director of county units and in state department of health. Will consider administrative position. **A474**

Physician, graduate of University of Iowa, candidate for Dr.P.H. at Harvard, seeks good administrative position. **A476**

Physician, M.D. Yale, M.S.P.H. Columbia; also short course for health officers, Vanderbilt. Good clinical background, 3 years' public health experience. Will consider appointment in child health, epidemiology or public health administration. **A350**

Physician, specialist in maternal and child health. M.D. University of Kansas, M.P.H. Harvard. Excellent background in pediatric residencies, experience in municipal and county health work and as director of maternal and child health in state health departments. Desires

position as director of a state program, as pediatrician, or in school or college health program. **A479**

Physician, aged 40, M.D. University of Minnesota, C.P.H. and Dr.P.H. Johns Hopkins, experienced in epidemiology and venereal disease control, will consider interesting position. **A482**

Dentist, University of Pittsburgh, D.D.S., M.P.H. University of Pennsylvania 1941, experienced in practice, wishes an administrative position in public health, preferably at state level. **M450**

HEALTH EDUCATION

Director of Health Education, woman. Knows fields of education and health education. National and state experience in organization, supervision, curriculum building, and teacher education. Now employed but would consider a change. **H495**

Young woman with Master's degree in Health Education, Teacher's College, Columbia University, and background of clinical laboratory work and biochemistry, seeks position as health educator in research or as laboratory assistant in public health. **H494**

Health educator with excellent background of teaching experience in schools. M.S.P.H. University of Michigan. Wishes position where skill with educational sound film projection and other recognized technics will be appreciated. **H405**

Public health nurse, M.A. Columbia, experienced in teaching health education and public health nursing. Wishes teaching position in college or university summer of 1941. **H472**

LABORATORY

Experienced woman bacteriologist, Ph.D. University of Illinois 1937, wishes position in teaching or research. Excellent bibliography and references. **L410**

Experienced bacteriologist, young man of 33, Sc.B., who for several years has been in charge of state laboratory doing public health and diagnostic bacteriology, immunology and serology, will consider opening. **L427**

SANITARY ENGINEERING

Engineer, aged 38, 3 years' experience as district sanitary supervisor, state department of health, together with work on plumbing, heating and ventilation, will consider position in the plumbing or heating field or state department of health. Prefers middle western or western states. **E453**

Engineer with good training and experience in water treatment, sewage plant operation and in research, wishes position as superintendent. Can go anywhere. **E422**

Advertisement

NURSE PLACEMENT SERVICE

Anna L. Tittman, R.N., Executive Director

Suite 512, Willoughby Tower, Michigan and Madison Avenues, Chicago, Ill.

Professionally sponsored. Approved Bureau of N.O.P.H.N. Non Profit No registration fee.

ADMINISTRATION: (a) Working Director; V.N.A.; West Coast; $1,800. No. 41-0476. (b) Similar to (a); New England. No. 41-0747. (c) Director; Official; Foreign; ability to speak Spanish; degree, P.H.N. certificate; $3,000–$4,000. No. 41-0869.

EDUCATION: (a) Instructor & Director P.H.N. University Program; $3,000–$3,250. No. 41-0903.

CONSULTATION: (a) Maternity; State-wide; midwest; $2,200–$2,400; No. 41-0610. (b) Similar to (a); Mid-Atlantic; $2,100. No. 40-2927.

SUPERVISION: (a) Generalized; V.N.A.; 13 staff nurses; Mid-Atlantic; $2,300. No. 41-0864. (b) Health Supervisor; Private; State-wide; East; $3,000–$3,600. No. 41-0870.

SCHOOL: (a) Supervisor; City Dept. of Education; Midwest; salary open. No. 41-0898. (b) Similar to (a); South. No. 41-0700. (c) One Nurse; includes formal teaching of high school students; Midwest; No. 40-2248. (d) Resident; private girls school for 275 girls; (50 boarding); Midwest. No. 41-0781.

ONE NURSE SERVICE: (a) Community nurse; generalized including school; New England; $1,800. No. 41-0709. (b) County Nurses; all sections. Salaries $135–$150.

CAMP: (a) Private; 325 boys; open June 27 to August 31; Midwest; $100–$125 & maintenance for season. No. 41-0830. (b) Private; 200 mothers & children; open June 15; Midwest; salary open. No. 41-0739. (c) Private; 80 boys; July 6–Sept. 1; teach class in first aid; $150 for season. No. 41-0900.

STAFF: (a) Generalized; private; New England; $120–$125 per month. No. 41-0902. (b) Generalized; private; Southwest; $144.50. No. 41-0782.

NEWS FROM THE FIELD

SUMMER SCHOOL COURSES IN PUBLIC HEALTH

While the following list does not show all universities and technical schools offering summer courses in public health, it represents those which have replied to a questionnaire sent out by the American Public Health Association.

Boston University, Boston, Mass.

July 7–August 16

Personal Hygiene Applied
Principles of Physical Education
Current Problems in Health, Physical Education and Recreation
Methods and Materials of Physical Education for Elementary Schools
Organization and Administration of Recreation in Rural and Urban Communities
Organization and Administration of Athletics in Schools and Colleges
The Psychology of Physical Education
First Aid, Care and Prevention of Injuries
Methods and Materials of Physical Education for Secondary Schools
Research or Directed Study in Physical Education

University of California, Berkeley, Calif.

June 30–July 19

Institute on School Health Service and Education (for registered nurses):
Public Health Aspects
Medical Problems
Group Discussions

June 30–August 8

General Bacteriology
Child Development
Physiology of the Growth and Development in the Child
Child Psychology
Public Health Aspects of School Health Service and Education—3 weeks' institute, June 30–July 19—under auspices of University of California and the State Department of Public Health
Introduction to Educational Psychology
General Psychology
Elementary Epidemiology *
Elementary Public Health *
Biochemistry *

* These three courses are offered in the Intersession, May 19–June 27.

University of California at Los Angeles, Los Angeles, Calif.

June 30–August 8

Elementary Bacteriology
Growth and Development of the Child
Adolescence
Administration of the School Health Program
Recreational Leadership
Elements of Nutrition
Introductory Psychology
Child Psychology
Educational Psychology
Abnormal Psychology
Public Health and Preventive Medicine
Principles and Practice of Public Health Nursing
Social Case Work as Related to Public Health Nursing
General Human Physiology
General Zoölogy
Endocrinology
Social Institutions
The Family
Counseling in the Secondary Schools
Mental Hygiene
Child Guidance
Community Control of Syphilis and Gonorrhea
Safety Education

The Catholic University of America, Washington, D. C.

June 27–August 9

Child Study
Nursing Education
Public Health Nursing
Social Work
Sociology

Colorado State College of Education, Greeley, Colo.

June 16–August 8

Courses in Nursing Education:
- Curriculum and Principles of Teaching
- Ward Management and Ward Teaching
- Teaching of the Nursing Arts
- Trends in Nursing Education
- Administration in Schools of Nursing

Teachers College, Columbia University, New York, N. Y.

July 7–August 15

Administration of Health Education in Public Schools; Principles and Current Problems in Health Education; Methods and Materials of Health Instruction in Schools and Colleges
Health Education
Health and Physical Education
Recreation
Health Care of Children
Nutrition and Health
Personal and General Hygiene
Public Health Nursing
Public Health Administration
School Hygiene
School Nursing

Education of the Exceptional:
- Demonstration Classes
- Observation, Practice Teaching, and Special Clinical Work
- Curriculum
- Survey of Ear, Orthopedic, Cardiac, and Certain Tuberculous Conditions, and of Certain Types of Malnutrition
- Education of the Blind and Partially Sighted
- Education of the Deaf (advanced courses only), and of the Hard of Hearing (beginning and advanced courses)
- Education of the Motor Handicapped
- Education of the Mentally Handicapped
- Education of the Socially Handicapped
- Psychology of Physically and Mentally Handicapped Children
- Music and Rhythms for the Handicapped

Cornell University, Ithaca, N. Y.

July 7–August 15

Health Education:
- The School Health Program
- Mental and Physical Health Problems of the School Child
- Mental Hygiene

Duke University, Durham, N. C.

June 10–July 21

Materials and Methods in Health Education
Mental Hygiene of the School Child
Personal and School Hygiene

Harvard University—Medical School, Boston, Mass.

June 18–August 1

Physiotherapy (course for graduates)

Harvard University—School of Public Health, Boston, Mass.

May 1–July 31

Lecture and laboratory courses in Industrial Hygiene (for physicians and engineers)

The University of Hawaii, Honolulu, Hawaii

June 30–August 8

The Teacher in Relation to School Health
Fundamentals of Health and Disease

University of Illinois, Urbana, Ill.

June 16–August 9

Bacteriology:
- Introductory Bacteriology and Sanitary Science
- Epidemiology
- Food and Microbiology

Chemistry:
- Biochemistry

Entomology:
- Life and Importance of Insects

Home Economics:
- Nutrition
- Dietetics
- Foods
- Organization and Management of the Home
- The Child and His Development

Physical Education for Men:
- Physical Education
- Problems in Physical Education
- Problems in School Health
- Problems in Public Health

Philosophy of Sport
Recreation Leadership
Safety Education
Training and First Aid
Physical Education for Women:
Physical Education
Physical Education Program for the High School
Playground Activities for Elementary Schools
Health Education in the High School
First Aid
Community Recreation
Social Administration:
Community Welfare Organization
Social Effects of Poverty

State University of Iowa, Iowa City, Iowa

June 9–August 1

Personal and Community Hygiene
School Hygiene
Problems in Water and Sewage Examinations
Advanced Hygiene
Physical Education Activity Courses
Methods and Principles of Physical Education
Tests and Measurements in Physical Education
Techniques of Research in Physical Education
Correctives and Corrective Clinic
Curriculum in Physical Education
Administration of Physical Education
History of Physical Education
Trends in Recreation
Administration of Recreation
Co-Recreational Activities
Crafts in the Recreation Program
Growth and Development
Seminar
Problems
Thesis

Loyola University (School of Medicine), Chicago, Ill.

June 23–August 2

Organization and Administration in Public Health Nursing
Public Health Nursing in Special Fields
Community Hygiene and Epidemiology
Methods and Materials in Health Education
Physiologic Hygiene
School Health Problems
Public Health Seminar
Applied Public Health Nutrition
Child Welfare
Public Health Statistics
Public Health Law
Principles of Social Case Work
Principles of Orthopedic Nursing
Advanced Vital Statistics
Field Work in Public Health Nursing
Field Work in Social Case Work
Educational Psychology

Marquette University, Milwaukee, Wis.
College of Nursing

June 23–August 1

Principles of Public Health Nursing I and II
Ward Administration
Ward Teaching
Professional Problems
Professional Ethics
Introduction to Nursing Education I and II
Principles and Methods of Teaching
Advanced Nutrition
Teaching the Elementary Nursing Course

Massachusetts Institute of Technology, Cambridge, Mass.

Bacteriology (June 16–July 3)
Public Health Bacteriological Methods (June 30–July 18)
Food Technology (June 30–July 18)
Four Year Summer Program leading to C.P.H.
Second Summer—June 30–August 20, 1941
Health Education
Pathology
Personal Hygiene and Applied Nutrition
Public Health Engineering Program—June 16–July 25

Massachusetts Institute of Technology, Cambridge, Mass.

June 16–July 25

Public Health Engineering:
Civil and Military Sanitation
Sanitary Bacteriology
Sanitary Biology
Sanitary Chemistry

Michigan State College, East Lansing, Mich.

June 24–August 1

General Bacteriology
Medical Biology Courses
Pathological Bacteriology
Personal Hygiene
Industrial Hygiene
Physical Education Departments offer the following courses:
School Health Problems
First Aid

University of Michigan, Ann Arbor, Mich.

June 30–August 8

For Undergraduates and Graduates

General Hygiene and Public Health
Child Hygiene
Public Health Statistics (Undergraduate)
School Health Program
Principles of Public Health Nursing
Special Fields in Public Health Nursing
Nutrition
Methods and Materials in Health Education
Tuberculosis
Sex Education and Hygiene
Eye Hygiene
Mental Hygiene
Public Health Aspects of Social Case Work
Physiologic Hygiene (Undergraduate)
Communicable Diseases and Epidemiology (Undergraduate)
The Public Health Nurse in the Orthopedic Program
The Public Health Nurse in the Syphilis Program
Physiologic Hygiene (Graduate)
Communicable Diseases and Epidemiology (Graduate)
Public Health Statistics (Graduate)
Public Health Law and Administration
Sanitation
Industrial Hygiene
Race Hygiene
Seminars in Public Health
Research in Public Health
The School Physician

Mills College, Oakland, Calif.

June 29–August 8

Child Development
Group-Work for Recreation Leaders
Home Economics
First Aid

University of Minnesota, Minneapolis, Minn.

First Term, June 16–July 25

Second Term, July 28–August 29

First Term:

Elements of Preventive Medicine and Public Health
Field Practice with Family Health Agency
School Health Problems
Community Sanitation
Public Health Administration and Field Work
Environmental Sanitation—General
Public Health Administration
Research
Biometric Principles
Biostatistics Laboratory
Topics in Biostatistics

Second Term:

Tuberculosis and Its Control
Mental Hygiene
Principles of Public Health Nursing
Field Practice with Family Health Agency
Special Methods and Supervised Practice in Health Education for Public Health Nurses
Public Health Administration and Field Work
Supervision in Public Health Nursing
Advanced Problems in Public Health Nursing
Research

National Society for the Prevention of Blindness, 1790 Broadway, New York, N. Y. (in coöperation with the following colleges and universities)

Courses for the Training of Teachers and Supervisors of Sight-Seeing Classes:

State Teachers College, Buffalo, N. Y.
Advanced Course, July 7–August 15
Wayne University, Detroit, Mich.
Elementary Course, June 23–August 2
Western Reserve University, Cleveland, Ohio, June 23–August 2
Advanced Course

Course in Sight Conservation for Nurses:

University of Minnesota, Minneapolis, Minn., June 16–July 25
Advanced Course, June 17–July 26

New Jersey State Teacher's College, Montclair, N. J.

July 7–August 13

Administration
Biology
Guidance
Personnel Problems
Philosophy of Education
Physical Education
Psychology and Mental Hygiene
Research and Techniques
Sociology
Techniques of Education
Tests and Measurements
Health and Health Teaching

University of New Mexico, Albuquerque, N. M.

June–August

Social Hygiene
Health Education
Contagious Diseases of Children
First Aid

New York School of Social Work, New York, N. Y.

June 17–August 29

Social Work Courses and Institutes
Community Health Problems
Field Work

New York University, New York, N. Y.
School of Education

Intersession, June 3–27

Administration of Public Health

Summer Session, July 1–18

Principles of Public Health Nursing I
Organization of School Nursing I
Teaching of Home Nursing and Child Care I
Social Agencies and Their Relation to the Public Health Nursing Program
Methods of Ward Management
Principles and Methods of Teaching in Nursing Education
Other courses in Nutrition
The Living Organism I
Psychology of Childhood
Psychology of Adolescence

Summer Session, July 21–August 8

Principles of Public Health Nursing II
Organization of School Nursing II
Teaching of Home Nursing and Child Care II
Teaching Activities of the Public Health Nurse
Methods of Ward Teaching
Supervision in Hospitals
Other courses in Nutrition
The Living Organism II
Psychology of Childhood
Psychology of Adolescence

July 1–August 8

Orthopedic courses offered at Lake Sebago:
A Survey of Physical Defects in Children
Practicum in Rehabilitation of Orthopedic Defects
Adaptation of Physical Education Activities for the Atypical Individual

Northwestern University, Evanston and Chicago, Ill.

June 23–August 16

Teaching Rhythms to Children
Problems in Physical Education
Methods of Teaching Health in Secondary Schools
Advanced Physiology of Physical Activity
Mental Hygiene in Teaching
Child Development
Psychological Development of Adolescents
Physical and Health Education for Administrators
Social Aspects of Play

University of Pennsylvania, Philadelphia, Pa.

June 30–August 12

Nursing Education:
Public Health Nursing
Physical Education:
Principles of Health Education

Rutgers University, New Brunswick, N. J.

June 30–August 8

Public Health Practice
Principles of Public Hygiene

Springfield College, Springfield, Mass.

July 7–August 9

Health and Physical Education for Atypical Children
Organization of Health, Safety and Physical Education
Tests and Measurements in Health and Physical Education
Physical and Health Inspection
Safety Education—First Aid and Athletic Injuries

Smith College—School for Social Work, Northampton, Mass.

July 2–August 27

Medical Information

Stanford University, Stanford University, Calif.

June 23–August 30

Physical Education and Hygiene

Stanford University Medical School, San Francisco, Calif.

June 23–July 18

Advanced Kinesiology
Psychology of the Invalid and the Handicapped
Therapeutic Gymnastics
Skeletal Muscle and Motor Activity in Health and Disease
Study of a Special Problem in Physical Therapy

Syracuse University, Syracuse, N. Y.

July 7–August 15

Principles of Public Health Nursing
Special Fields in Public Health Nursing
Case Studies in Public Health Nursing
Psychology (Child, Adolescent, Educational)
Nutrition
Hygiene Methods
Mental Hygiene
Public Health and Statistics
Methods of Teaching in Public Health Nursing

Temple University, Philadelphia, Pa. Teachers College, Department of Physical and Health Education

July–August

Educational Hygiene
Administration of Health Education
Orthopedics
Safety Education

University of Utah, Salt Lake City, Utah

June 16–July 23

Biology
Chemical Research
Problems in Child Development
Guidance and Personnel in Secondary Schools
Physical Education and Hygiene
Home Economics
Social Work
Introduction to Public Health (Sanitation)
Personal Health and Its Teaching
Principles of Child Welfare
The Child and the Curriculum
Activities in the Kindergarten
Social and Civic Functions of Education
Health and Nutrition
American Social Problems
Principles of Social Psychology
Personality Development
Guidance of High School Girls
School Discipline—causes of problem behavior
Recreational Physical Activities

Vassar College, Poughkeepsie, N. Y.

June 19–July 31

Institute of Euthenics:
Child Development, Family Relationships, and Guidance
Home Management
Economic Problems of the Consumer

University of Virginia, University, Va.

June 16–July 26

First Term:
School Hygiene and Sanitation
Second Term:
Physical Welfare of the Child

Wagner College, Staten Island, N. Y.

June 9–July 19

Bacteriology
Applied Bacteriology
Serology
Clinical Pathology
Seminar in Medical Technology

Washington University, St. Louis, Mo.

June 16–July 25

Education
Natural Sciences
Physical Education and Hygiene
Psychology
Sociology and Social Work

University of Washington, Seattle, Wash.

June 18–July 18 (First Term)
July 21–August 20 (Second Term)

Diagnosis in Education
Behavior as an Expression of Health
Nutrition for Public Health Nurses
Fundamentals of Nutrition
Bacteriology
Special Fields of Public Health Nursing
Public Health Administration and Epidemiology
Principles of Teaching Nursing and Health
Methods and Materials in Health Teaching
School Health Program
Public Health Program
Personal and General Hygiene
Introduction to Public Health Nursing

Western Reserve University—School of Nursing, Cleveland, Ohio

June 23–August 1

Principles and Methods of Teaching in Nursing
Ward Management and Teaching
Public Health Nursing II
Principles of Public Health
Child Development
Teaching of the Nursing Arts

West Virginia University, Morgantown, W. Va.

June 11–August 26

Advanced Public-School Health
Administration of Physical Education
Safety Education
Administration of Public Recreation
Adaptation and Evaluation of Activities in Physical Education
Principles and Program of Physical Education in the Elementary Schools
Modern Trends and Principles of Physical Education

University of Wisconsin, Madison, Wis.

June 30–August 8

Curriculum in Physical Education for Secondary Schools
First Aid and Safety Education
Health Education in Schools
Human Anatomy
Medical Bacteriology
Physical Examinations and Therapeutics
Play, Recreation and Leisure Time Problems
Physical Therapy
School Health and Hygiene
Therapeutic Gymnastics
The Extra-curricular Physical Education Program in the Public Schools
Physical Education for Elementary and Secondary Schools
Physical Examinations

NATIONAL DEFENSE

DR. THOMAS PARRAN, Surgeon General of the U. S. Public Health Service, announced on April 6 that the public health facilities in the State of Maryland around military and industrial plants will become a field training area for the federal service's new personnel. The public health reinforcements in the form of physicians, engineers, nurses, laboratory technicians and equipment from the Public Health Service will be used in other states which have defense areas, but the training will be done in Maryland as a part of an augmented public health program authorized by Congress in connection with national defense.

Areas in Maryland where the state public health service is to be federally reinforced are the counties of Baltimore, Anne Arundel, Hartford, Prince Georges, and Howard and Baltimore City.

Dr. L. B. Byington of the Public Health Service has been appointed deputy state health officer and deputy city health officer for Baltimore and will serve as liaison agent between the state and federal services. Directly linked with this augmented Maryland defense health program is the training course in public health for new personnel of the Public Health Service which began April 7, at the National Institute of Health, Bethesda, Md. Physicians, engineers, nurses, and laboratory technicians selected from the Civil Service lists will be given intensive 6 weeks courses in public health administration, communicable disease control, local public health problems, laboratory technics, food and milk sanitation, industrial hygiene, and venereal disease control.

The Public Health Service staff in charge of the course is headed by Senior Surgeon M. V. Ziegler, Mary J. Dunn, Nursing Consultant, Sanitary Engineer E. S. Tisdale, and professors from leading university schools of public health. The final 2 weeks of the course will be spent in the field. It is expected that successive 6 weeks' courses will be given at the Institute until the personnel provided for under the emergency health and sanitation program has been recruited and trained.

A MEDICAL COLLEGE CELEBRATES

NEW YORK University's College of Medicine celebrated its hundredth anniversary on March 21. The College was established at a time when medical education in this country was on a low plane, and it was a pioneer in introducing the more rigorous discipline of the French schools, then the finest of their kind in the world. Also, its affiliation with Bellevue Hospital Medical College, which it eventually absorbed, strengthened its early position. Its faculty has included such eminent men as Valentine Mott, John W. Draper, Lewis A. Sayre, Austin Flint, William H. Welch. Among its 11,000 graduates are such conspicuous figures as Walter Reed, W. C. Gorgas, Herman H. Biggs, and Joseph Goldberger.

N.O.P.H.N. RECORD FORMS AVAILABLE

THE Nursing Records Committee of the National Organization for Public Health Nursing has announced that record forms, as revised by the Nursing Records Committee, are now available. Included among the new records are: The Family Folder, Family Data Sheet, Morbidity Record, Child Health Service Record, and a General Health Supervision Record. The N.O.P.H.N. announces that these forms may be purchased from Mead and Wheeler, 1022 South Wabash Avenue, Chicago.

WPA HEALTH PROGRAM TO BE EXPANDED

EXPANSION and redirection of all community service programs of the Works Projects Administration toward activities related to home defense will include widening of the public health program, according to an announcement. Training of as many as 50,000 persons in the next 12 months as ward attendants, orderlies, and hospital aides capable of giving simple bedside care will be one feature of the program. At present the public health program is devoted to assisting public hospitals, clinics, and sanatoria. The school lunch program, which now provides hot lunches for approximately 2 million school children, as well as the gardening and food preservation projects, will also be strengthened.

DIVISION OF INDUSTRIAL HYGIENE REORGANIZES

A GENERAL reorganization of the Division of Industrial Hygiene of the National Institute of Health, Washington, D. C., is announced in order to meet the greater needs of the present and future program in national defense. Two sections, based on the major activities of the division, and three units, which function as service supply to the two sections, but which also have certain non-related functions, have been established. The new organization is as follows:

J. G. Townsend, M.D., Medical Director, Chief of the Division of Industrial Hygiene

States' Relations and National Defense Activities Section—Chief, Sanitary Engineer J. J. Bloomfield

Research Section—Chief, Surgeon P. A. Neal, M.D.

Medical Unit—Chief, P. A. Surgeon W. C. Dreesen, M.D.

Engineering Unit—Chief, P. A. Sanitary Engineer (R) A. D. Brandt, Sc.D.

Statistical Unit—Chief, Senior Statistician W. M. Gafafer, D.Sc.

CANCER RESEARCH GRANTS ANNOUNCED

GRANTS totaling $23,800 to institutions engaged in cancer research have been announced by the National Advisory Cancer Council. The grants have been allotted as follows: Meharry Medical College, Nashville, Tenn., $1,100 for maintenance of clinical records for statistical analysis; Jackson Memorial Laboratory, Bar Harbor, Me., $15,000 for research into genetics of cancer; Barnard Free Skin and Cancer Hospital, St. Louis, Mo., $5,000 for study of changes in cancer cells; American Registry of Pathology, Army

Medical Museum, Washington, D. C., $1,000 for collection and registry of pathological specimens; Cornell University Medical College, New York City, $2,700 for study of "Butter yellow" liver tumors of rats.

DR. SALADRIGAS DIRECTS FINLAY INSTITUTE IN HAVANA

THE President of the Republic of Cuba, on nomination of the Minister of Health, has appointed Dr. Enrique Saladrigas as Director of the Finlay Institute, Havana. Dr. Saladrigas has announced that it is intended completely to reorganize the Institute and to encourage close coöperation with similar Institutes in other countries in order to promote its program in the field of tropical disease and medical research.

THE NATIONAL DENTAL HYGIENE ASSOCIATION

THE National Dental Hygiene Association was incorporated in the District of Columbia, June 12, 1940, as a philanthropic non-profit corporation for the advancement of dental health for the American people. The Martha M. Hall Foundation of New York has sponsored the project and has made a grant of funds to carry the basic expenses of an educational program for an initial period of years. Headquarters of the association are in the Shoreham Building, Washington, D. C.

The association officers include James J. Morgan, President, and Chairman of the Board of Directors of the Martha M. Hall Foundation, and Randolph G. Bishop as Secretary.

The association has declared as its purpose the encouragement of socially minded persons in dental health to the end that they will give support to community programs and aid in the advancement of dental health for all the people. In the development of its program the National Dental Hygiene Association expects to coördinate its efforts with the American Dental Association and its component societies, and with the health programs being conducted by state health departments. A National Advisory Committee is being formed. Though the association does not contemplate making financial grants for local service and educational programs, it does expect to give other aid to communities in the development of facilities for adequate dental health programs.

NATIONAL TECHNOLOGICAL CIVIL PROTECTION COMMITTEE

A NATIONAL Technological Civil Protection Committee has been appointed by the Honorable Henry L. Stimson, U. S. Secretary of War, consisting of the following members representing their respective specialty groups:

Walter D. Binger, Chairman, American Society of Civil Engineers
W. H. Carrier, American Society of Heating and Ventilating Engineers
Frederick G. Frost, American Institute of Architects
E. M. Hastings, American Railway Engineering Association
Harry E. Jordan, American Water Works Association
W. Cullen Morris, American Gas Association
John C. Parker, American Institute of Electrical Engineers
Arthur B. Ray, American Institute of Chemical Engineers
Scott Turner, American Institute of Mining and Metallurgical Engineers
James L. Walsh, American Society of Mechanical Engineers
Abel Wolman, American Public Health Association
A contact member of the War Department

Although without any official authority, this committee is organized for the study of defense especially as it relates to public utilities, public services, etc. Publications on "Protective Construction" on "Gas Defense" on "Blackout," and on "Fire Protection" are being sponsored by the committee.

DR. VAUGHAN RETIRES IN DETROIT

HENRY F. VAUGHAN, Dr.P.H., retired on April 15 as Commissioner of Health of Detroit, Mich., after service with the department since January, 1919, to become associated with the School of Public Health at the University of Michigan, Ann Arbor.

The Detroit Board of Health has announced that, effective April 15, Bruce H. Douglas, M.D., has been made Commissioner of Health to succeed Dr. Vaughan; Joseph G. Molner, M.D., M.P.H., Deputy Commissioner and Medical Director; and Garner M. Byington, M.D., Dr.P.H., Director of Child Welfare and School Health Service.

Dr. Douglas, who has been Acting Superintendent of the Herman Kiefer Hospital and Tuberculosis Controller for the Department of Health, is a graduate of Rush Medical College in 1920. Dr. Molner, since July 1, 1938, has served as Deputy Commissioner of Health and Director of School Health Service in Detroit. He is a graduate of the Wayne University College of Medicine in 1935 and of Johns Hopkins School of Public Health, Baltimore. Dr. Byington has served as physician in charge of medical relations and post-graduate instruction in the department and was particularly concerned with the tuberculosis case finding and the diphtheria prevention activities. He is a graduate of the Wayne University College of Medicine in 1911.

MEDICAL ADMINISTRATION SERVICE

DR. KINGSLEY ROBERTS, of New York, has announced the incorporation of Medical Administration Service, 1790 Broadway, New York, N. Y., to provide technical assistance in the development of new or existing health services, with special reference to medical and hospital care, and to make analyses and studies of the problems of preventive and curative medicine as they relate to the community. The service is a non-profit, advisory group ready to assist in applying "the engineering approach to problems of health care." Experts and consultants in medical care, hospital administration, industrial medicine, statistical evaluation, hospital and clinic design, and related subjects are an integral part of the organization.

Among the names listed on the sponsoring committee are: Ernst P. Boas, M.D., Carl E. Buck, Dr.P.H., Hugh Cabot, M.D., Michael M. Davis, Ph.D., Dorothy Deming, R.N., Alta E. Dines, R.N., John P. Peters, M.D., G. Canby Robinson, M.D., Henry E. Sigerist, M.D., and C.-E. A. Winslow, Dr.P.H.

ST. LOUIS COUNTY, MISSOURI, AWARD

LEONARD M. BOARD, Public Health Engineer and Director of the Division of Sanitation of the St. Louis County Health Department, Missouri, recently received the civic award of the St. Louis County Junior Chamber of Commerce.

The award is made annually to a young man under age 35 making the most outstanding civic contribution to the County. The citation called attention to Mr. Board's efforts in improving public health conditions in St. Louis County.

LOUISIANA REORGANIZES BOARD OF HEALTH

IN connection with the reorganization of the Louisiana State Board of Health, the Bureau of Sanitary Engineering has been changed to Division of Public Health Engineering. The personnel and activities have been expanded to include work formerly done under other divisions of the Board; for example, Food and Drug Administration, Milk Sanitation and Environmental Sanitation (WPA Community Sanitation Projects). J. W. Forbes, formerly with the Montana State Board

of Health, has been appointed Head of the Food and Drug Section, and H. G. McAndrews, formerly with the Kentucky State Board of Health, has been appointed to head the Milk Sanitation Section.

POUGHKEEPSIE-DUTCHESS COUNTIES ASSOCIATIONS MERGE

IT has been announced that the Poughkeepsie Committee on Tuberculosis and Public Health and the Dutchess County Health Association of the State Charities Aid Association have merged. The enlarged County Association will continue to direct its coöperative efforts toward the control of tuberculosis and syphilis. The Poughkeepsie Children's Health Camp, operated for many years by the Poughkeepsie Committee as the agent of the local Lodge of Elks, will be discontinued.

JOHN LARABEE POMEROY, M.D.

DR. JOHN L. POMEROY, Health Officer of Los Angeles County, died on March 24 at the age of 57. In the 26 years of his administration, he built the personnel of the department from 3 to 465. In 1925 he began the development of health centers in the County. The newest, the twelfth, was opened last month. Dr. Pomeroy was elected to membership in the Association in 1915, to Fellowship in 1925, and would have completed a second term as a member of the Governing Council this year. He was President of the Western Branch in 1934.

TYPHOID CARRIER REGISTER IN NEW YORK STATE

AT the close of 1940, as announced by the *New York State Health News*, a total of 434 typhoid carriers, exclusive of those in state institutions, were under supervision in upstate New York. Thirty-seven new carriers were added and 25 were removed from the register during the year. Twenty-eight were discovered as a result of epidemiological investigation of sporadic cases of typhoid, 1 by means of release cultures, 1 as a result of routine food handler examination, and 2 were discovered accidentally at time of cholecystectomy. Of the 25 carriers whose names were removed from the register, 15 have died. Six were released from restrictions after the submission of the required number of negative fecal and duodenal specimens following their cholecystectomy.

PERSONALS

Central States

THOMAS E. CAMPER, M.D.,* formerly of Stambaugh, Mich., has been appointed director of the Shiawassee County Health unit, with offices in Corunna. He has been succeeded as director of the Iron County Health Department by DR. LORIN E. KERR, JR.*

WILBERT W. LAWRENCE, M.D., Norwalk, Ohio, has been appointed Health Officer of Huron County to succeed DR. ROBERT P. SCOTT, JR., who has left for military service.

ALEXANDER S. MACK, M.D., Oak Harbor, Ohio, has been appointed Health Officer of Ottawa County to serve during the absence of DR. CYRUS R. WOOD, Port Clinton, who is in military service.

THEODORE S. SCHULDT, M.D., Pierceton, Ind., has been named Health Officer of Kosciusko County, filling the unexpired term of DR. MAX D. GARBER, Warsaw, who resigned to do research work at Johns Hopkins Hospital, Baltimore.

HARRY G. SOUTHARD, M.D., Marysville, Ohio, has been appointed Health Commissioner of Hocking County.

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* Fellow A.P.H.A.
† Member A.P.H.A.

Eastern States

J. BURNS AMBERSON, JR., M.D., was elected president of the New York Tuberculosis and Health Association by unanimous vote of the board of directors of the 39th annual meeting. He takes the place of DR. I. OGDEN WOODRUFF who has served the association as president for six years.

JOHN E. GORDON, M.D.,† Professor of Preventive Medicine and Epidemiology, Harvard Medical School, Boston, and now in charge of the Red Cross-Harvard University Hospital recently established in England, has been appointed United States liaison officer with the British Ministry of Health.

EDWARD S. ROGERS, M.D.,† who was formerly Director of the Bureau of Pneumonia Control of the New York State Department of Health, has been appointed Assistant Commissioner for Medical Administration, effective March 1.

FRANCIS O. SCHMIDT, PH.D., Rebstock Professor of Zoölogy, Washington University, St. Louis, has been appointed Professor of Biology in charge of the program in biologic engineering at the Massachusetts Institute of Technology.

W. F. WILLCOX, Professor, of Ithaca, N. Y., celebrated his eightieth birthday on March 22, receiving many greetings from friends.

Western States

HERALD R. COX, SC.D., principal bacteriologist of the U. S. Public Health Service, Hamilton, Mont., was presented with the 1940 Theobald Smith award in medical science, during the recent meeting of the American Association for the Advancement of Science in Philadelphia.

M. F. SCHAFER, M.D., has been appointed Director of the El Paso County Health Unit, Colorado Springs, Colo., to succeed DR. THOMAS D. MENSER,* who has resigned to enter private practice in Trinidad, Colo. Dr. Schafer has interrupted his course at the University of Michigan to accept the appointment.

ANTON C. SIBILSKY, M.D.,* formerly of Laurium, Mich., has been appointed in charge of the North Central Idaho Health Unit, succeeding DR. HUGH F. STANTON.

Southern States

ARCHIBALD M. GAULOCHER, M.D., a graduate of Columbia University and of the College of Physicians and Surgeons, New York, N. Y., has been added to the staff of the Alabama State Department of Health as associate in charge of its Division of Mental Hygiene. The Division of Mental Hygiene will be a unit of the Bureau of Hygiene and Nursing.

C. F. MCCLINTIC, M.D., of Williamsburg, W. Va., has been appointed State Health Officer, succeeding DR. A. E. MCCLUE.

JAMES P. MOON, M.D., Dyersburg, Tenn., Health Officer of Dyer County, has been appointed Health Officer of Franklin County to succeed the late DR. VICTOR J. GANEY.

OREN A. OLIVER, D.D.S., Nashville, Tenn., and DR. JOHN R. THOMPSON, JR., Jackson, were recently appointed members of the state public health council for three year terms.

Foreign

DEMETRIO CASTILLO, M.D.,* Valencia, Venezuela, has been appointed Health Officer, succeeding DR. ARREAZA GUZMAN, who has been transferred to Maracaibo.

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* Fellow A.P.H.A.
† Member A.P.H.A.

DEATHS

LOUIS RESNICK, Director of Industrial Relations of the National Society for the Prevention of Blindness, New York, N. Y., died March 18.

GEORGE HALL HAZLEHURST,† Chief Engineer and Director of the Bureau of Sanitation, Alabama Health Department, died March 8 at Montgomery, Ala. He had been with the Alabama State Department of Health since 1917.

HENRY L. K. SHAW, M.D., first Director of the Division of Maternity, Infancy and Child Hygiene of the New York State Department of Health and practising pediatrician of Albany, N. Y., died on March 26.

CONFERENCES AND DATES

American Association for the Advancement of Science. Durham, N. H. June 22–27.

American Association of Social Workers. Delegate Conference. Philadelphia, Pa. May 30–31.

American College of Surgeons. Hotel Statler, Boston, Mass. November 3–7.

American Home Economics Association—34th Annual Meeting. Stevens Hotel, Chicago, Ill. June 22–26.

American Hospital Association. Atlantic City, N. J. September 15–19.

American Library Association. Annual Meeting. Boston, Mass. June 19–25.

American Medical Association—92nd Annual Meeting. Cleveland, Ohio. June 2–6.

American Optometric Association—44th Annual Congress. Ambassador Hotel, Atlantic City, N. J. Week of June 29.

American Physiotherapy Association — 20th Annual Conference. Asilomar, Pacific Grove, Calif. July 13–18. (Graduate Program in Physical Therapy, sponsored by the American Physiotherapy Association. Stanford University Medical School, San Francisco, Calif. June 23–July 18.)

American Public Health Association—70th Annual Meeting. Convention Hall, Atlantic City, N. J. October 14–17.

American Society of Heating and Ventilating Engineers—Summer Meeting. San Francisco, Calif. June 16–20.

American Society of Planning Officials. National Conference on Planning, in coöperation with American Institute of Planners, American Planning and Civic Association, National Economic and Social Planning Association. Philadelphia, Pa. May 11–14.

American Water Works Association—61st Annual Convention. Royal York Hotel, Toronto, Ont., Can. June 22–26.

Pacific Northwest Section—Olympic Hotel, Seattle, Wash. May 8–10.

Southeastern Section—Charleston, S. C. May 12–14.

Ohio Section—Gibson Hotel, Cincinnati, Ohio. May 15–16.

Montana Section—Hotel Florence, Missoula, Mont. May 23–24.

Western Pennsylvania Section—Erie, Pa. August 7–9.

Rocky Mountain Section—LaFonda Hotel, Santa Fe, N. M. September 18–19.

Michigan Section—Grand Rapids, Mich. September 24–26.

Minnesota Section—Minneapolis, Minn. October 9–11.

Southwest Section—Fort Worth, Tex. October 13–16.

California Section—Fresno, Calif. October 22–25.

Kentucky-Tennessee Section — Nashville, Tenn. October 27–29.

Missouri Valley Section—Cedar Rapids, Iowa. October 20–22.

North Carolina Section—Sheraton Hotel, High Point, N. C. November 3–5.

Four States Section—Baltimore, Md. November 6–7.

Civil Service Assembly:

Eastern Regional Meeting, Washington, D. C. 3rd week in May.

Central Regional Meeting, Chicago, Ill. May 15–17.

Western Regional Meeting, Los Angeles, Calif. May 26–28.

Colorado Public Health Association. La Junta, Colo. May 9–10.

Conference of State and Territorial Health Officers of North America. Washington, D. C. Tentative date: Week of April 28.

Dairy Industries Exposition. Concurrent with annual convention of the International Association of Milk Dealers, and the International Association of Ice Cream Manufacturers. Automotive Building, Canadian National Exhibition. October 20–25.

Florida Public Health Association. Orlando, Fla. December, 1941.

Food Conference—under the auspices of the

Institute of Food Technologists. Pittsburgh, Pa. June 16–18.

Group Health Federation of America—Third Annual Convention. Los Angeles, Calif. June.

Heating, Piping & Air Conditioning Contractors National Association. San Francisco, Calif. June 16–20.

Idaho Public Health Association. Lewiston, Ida. October 6–7.

Institute of Government. University of Southern California, Los Angeles, Calif. June 9–14.

International Association of Public Employment Services. Denver, Colo. June 2–5.

Iowa Public Health Association. Des Moines, Ia. May 8–9.

Michigan Public Health Association. Grand Rapids, Mich. November 12–14.

Missouri Public Health Association. St. Louis, Mo. May 15–17.

National Association of County Officials. Louisville, Ky. May 14–17.

National Association of Purchasing Agents—Governmental Group. Chicago, Ill. May 26–29.

National Conference of Social Work. Atlantic City, N. J. June 1–7.

National Education Association. Boston, Mass. June 29–July 3.

National Foundation for Infantile Paralysis—Medical Committees. Semi-annual Meeting. Foundation Office, 120 Broadway, New York, N. Y. May 15.

National Tuberculosis Association. 37th Annual Meeting. Hotel Gunter, San Antonio, Tex. May 5–8.

New England Conference on Tomorrow's Children—Second. Littauer Center, Harvard University, Cambridge, Mass. July 16–18.

New Mexico Public Health Association. Gallup, N. M. October.

New York State Association of Public Health Laboratories—25th Annual Meeting. School of Medicine, Syracuse University, Syracuse, N. Y. May 19.

New York State Association of School Physicians at Grand Union Hotel, Saratoga Hotel, Saratoga Springs, N. Y. June 23.

Ohio Federation of Public Health Officials. Columbus, Ohio. May 23.

Pacific Heating and Air Conditioning Exposition. Exposition Auditorium, Civic Center, San Francisco, Calif. June 16–20.

Pennsylvania Public Health Association. Wilkes-Barre, Pa. May 28.

Smoke Prevention Association of America, Inc.—35th Annual Convention. Ansley Hotel, Atlanta, Ga. June 3–6.

Special Libraries Association. Hartford, Conn. June 16–19.

State Charities Aid Association—State and Local Committees on Tuberculosis and Public Health. Hotel Commodore, New York, N. Y. May 20–21.

Tennessee Public Health Association. Nashville, Tenn. May 19–21.

Western Branch, American Public Health Association—12th Annual Meeting. San Diego, Calif. May 25–29.

Canada

Canadian Federation of Mayors and Municipalities. Ottawa, Ont. June.

Canadian Public Health Association—30th Annual Meeting. Chateau Frontenac, Quebec, Que. June 9–11.

Foreign

International College of Surgeons. Mexico City, Mexico. August 10–13.

Pan American Medical Association—8th Congress. Buenos Aires, Argentina. 1941.

Second Inter-American Congress of Municipalities. Santiago, Chile. September 15–21.

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